Alexandra Wactawiw

Access DB# _____

SEARCH REQUEST FORM

61929

Scientific and Technical Inf rmation Center

Requester's Full Name: My-Chau Tram Examiner #: 78933 Date: 3/8/02
Art Unit: 1641 Phone Number 305-6999 Serial Number: 09/811,538
Mail Box and Bldg/Room Location: CM1, 8A16 Results Format Preferred (circle): (PAPER) DISK E-MAIL
7E12

If mor than one search is submitted, please prioritize searches in order of need. MEJ

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Method for detecting an analyte by fluorescence

Inventors (please provide full names): Mary A. Reppy, Sara A. Fjorn, and Charles F. Saller

Earliest Priority Filing Date: 3/20/2000

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Alexandra, can you please perform the following searches:

① Inventors Search
② Attached claims

Thank you

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STAFF USE ONLY

Searcher: _____
Searcher Phone #: Point of Contact: Alexandra Wactawiw Technical Info. Specialist CM1 6A02 Tel: 308-4392
Searcher Location: _____
Date Searcher Picked Up: 3-11-02
Date Completed: 3-14-02
Searcher Prep & Review Time: 8 12 (10)
Clerical Prep Time: _____
Online Time: 49

Type of Search

NA Sequence (#) _____
AA Sequence (#) _____
Structure (#) _____
Bibliographic _____
Litigation _____
Fulltext _____
Patent Family _____
Other _____

Vendors and cost where applicable

STN _____ $411
Dialog _____
Questel/Orbit _____
Dr.Link _____
Lexis/Nexis _____
Sequence Systems _____
WWW/Internet _____
Other (specify) _____

4
sep 25-33

PTO-1590 (8-01)

Inventor Search

Tran 09/811,538

```
=> fil medline biosis hcaplus wpids
FILE 'MEDLINE' ENTERED AT 13:43:37 ON 11 MAR 2002

FILE 'BIOSIS' ENTERED AT 13:43:37 ON 11 MAR 2002
COPYRIGHT (C) 2002 BIOLOGICAL ABSTRACTS INC.(R)

FILE 'HCAPLUS' ENTERED AT 13:43:37 ON 11 MAR 2002
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2002 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'WPIDS' ENTERED AT 13:43:37 ON 11 MAR 2002
COPYRIGHT (C) 2002 DERWENT INFORMATION LTD

=> d que l4;d his l5-
L1            15 SEA ("REPPY M A"/AU OR "REPPY MARY A"/AU OR "REPPY MARY
                 ALICE"/AU)
L2            26 SEA ("SPORN S"/AU OR "SPORN S A"/AU OR "SPORN SARAH"/AU OR
                 "SPORN SARAH A"/AU OR "SPORN SARAH ANN"/AU)
L3           133 SEA ("SALLER C"/AU OR "SALLER C F"/AU OR "SALLER CHARLES"/AU
                 OR "SALLER CHARLES F"/AU OR "SALLER CHARLES FREDERICK"/AU)
L4           170 SEA (L1 OR L2 OR L3)



     (FILE 'MEDLINE, BIOSIS, HCAPLUS, WPIDS' ENTERED AT 13:40:24 ON 11 MAR
     2002)
L5          3043 S POLYDIACETYLENE? OR POLY DIACETYLENE?
L6           445 S DI ACETYLENE OR POLYDI ACETYLENE
L7          3379 S L5 OR L6
L8             2 S L4 AND L7
L9            17 S L4 AND (ASSAY? OR IMMUNOASSAY?)
L10            1 S L9 AND FLUORES?
L11       192436 S ARRAY?
L12            1 S L4 AND L11
L13            2 S L8 OR L10 OR L12
L14            1 DUP REM L13 (1 DUPLICATE REMOVED)

     FILE 'MEDLINE, BIOSIS, HCAPLUS, WPIDS' ENTERED AT 13:43:37 ON 11 MAR 2002

=> d all l14

L14  ANSWER 1 OF 1  HCAPLUS  COPYRIGHT 2002 ACS        DUPLICATE 1
AN   2001:713655  HCAPLUS
DN   135:269637
TI   Method for detecting an analyte by fluorescence
IN   Reppy, Mary A.; Sporn, Sarah A.; Saller, Charles
     F.
PA   Analytical Biological Services, Inc., USA
SO   PCT Int. Appl., 54 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
IC   ICM  G01N021-00
     ICS  G01N021-01; G01N021-17; G01N031-20; G01N033-544; G01N033-538;
          G01N033-567; G01N033-537; G01N033-543; G01N033-53; G01N033-546;
          G01N033-552; C12M001-00; C12N001-00; C12N001-20; C12N011-00;
          C12Q001-68; C07H021-04
CC   9-5 (Biochemical Methods)
```

Section cross-reference(s): 73

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001071317	A1	20010927	WO 2001-US8790	20010320

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI US 2000-190091 P 20000320

AB Methods for detecting an analyte are described which entail contacting two-dimensional or three-dimensional arrays of a polydiacetylene backbone having incorporated in the array a substrate which has a direct affinity for, can bind with, or can react with the analyte and detecting changes in the fluorescence of the array to indicate the presence of the analyte.

ST **fluorescence assay polydiacetylene** bound substrate

IT Toxins
RL: ANT (Analyte); ANST (Analytical study)
(cholera; **fluorescence assays** using substrates incorporated in **polydiacetylene** backbones)

IT Antibodies
RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(conjugates; **fluorescence assays** using substrates incorporated in **polydiacetylene** backbones)

IT Liposomes
(**fluorescence assays** using substrates incorporated in **polydiacetylene** backbones)

IT Enzymes, analysis
RL: ANT (Analyte); ANST (Analytical study)
(**fluorescence assays** using substrates incorporated in **polydiacetylene** backbones)

IT **Immunoassay**
(**fluorescence**; **fluorescence assays** using substrates incorporated in **polydiacetylene** backbones)

IT **Immunoassay**
(immunofluorometric; **fluorescence assays** using substrates incorporated in **polydiacetylene** backbones)

IT 121207-31-6, BODIPY 493/503
RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(BODIPY 493/503; **fluorescence assays** using substrates incorporated in **polydiacetylene** backbones)

IT 209340-49-8
RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(BODIPY 630/650; **fluorescence assays** using substrates incorporated in **polydiacetylene** backbones)

IT 217190-24-4, BODIPY TR cadaverine
RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES

(Uses)
(BODIPY TR cadaverine; **fluorescence assays** using substrates incorporated in **polydiacetylene** backbones)

IT 203250-31-1, Dapoxyl AES
RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(Dapoxyl (2-aminoethyl)sulfonamide; **fluorescence assays** using substrates incorporated in **polydiacetylene** backbones)

IT 15492-51-0 15522-71-1, Tris(2,2,6,6,-tetramethyl-3,5-heptanedionato)europium 26093-31-2, 7-Amino-4-methylcoumarin 37758-47-7, Ganglioside GM1 64821-29-0, 16-(9-Anthroyloxy)palmitic acid 67000-89-9, 1-Pyrenebutanol 155773-68-5D, conjugates with antibodies 362596-00-7
RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(**fluorescence assays** using substrates incorporated in **polydiacetylene** backbones)

IT 18194-24-6D, Dimyristoyl phosphatidylcholine, reaction products with tricosadiynoic acid 66990-30-5D, 10,12-Tricosadiynoic acid, reaction products with dimyristoyl phosphatidylcholine 66990-32-7D, 10,12-Pentacosadiynoic acid, UV-crosslinked 178560-65-1, 5,7-Docosadiynoic acid
RL: ARU (Analytical role, unclassified); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(**fluorescence assays** using substrates incorporated in **polydiacetylene** backbones)

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Biocircuits Corporation; WO 9502183 A1 1995 HCAPLUS
(2) Charych; US 6022748 A 2000 HCAPLUS
(3) Charych; US 6080423 A 2000 HCAPLUS
(4) Charych; US 6103217 A 2000 HCAPLUS
(5) Charych; US 6180135 B1 2001 HCAPLUS
(6) Regents Of The University Of California; WO 9910743 A1 1999 HCAPLUS
(7) Saul; US 5415999 A 1995 HCAPLUS
(8) The Regents Of The University Of California; WO 9836263 A1 1998 HCAPLUS
(9) The Regents Of The University Of California; WO 9839632 A1 1998 HCAPLUS
(10) The Regents Of The University Of California; WO 9967423 A1 1999 HCAPLUS

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                    Equipment/CT
E9          0     BT3   Investigative Techniques/CT
E10      5436      BT2   Genetic Techniques/CT
E11      5673       BT1   Sequence Analysis/CT
E12      2097        -->   Oligonucleotide Array Sequence Analysis/CT
E13      2097        MN    E5.393.661.640./CT
E14      2097        MN    E5.393.760.640./CT
                      DC     an INDEX MEDICUS major descriptor
                      NOTE   Hybridization of a nucleic acid sample to a very
                             large set of oligonucleotide probes, which are
                             attached to a solid support, to determine sequence
                             orto detect variations in a gene sequence or
                             expression or for gene mapping.
                      INDX   coord with GENE EXPRESSION PROFILING if pertinent
                      AQ     CL EC HI IS MT SN ST TD UT VE
                      PNTE   Nucleic Acid Hybridization (1993-1998)
                      HNTE   99
                      MHTH   NLM (1999)
E15         0         UF     Array, Oligonucleotide/CT
E16         0         UF     Array, cDNA/CT
E17         0         UF     Arrays, Oligonucleotide/CT
E18         0         UF     Arrays, cDNA/CT
E19         0         UF     Chip, DNA/CT
E20         0         UF     Chip, Gene/CT
E21         0         UF     Chip, Gene Expression/CT
E22         0         UF     Chips, DNA/CT
E23         0         UF     Chips, Gene/CT
E24         0         UF     Chips, Gene Expression/CT
E25         0         UF     DNA Chip/CT
E26         0         UF     DNA Chips/CT
E27         0         UF     DNA Microarray/CT
E28         0         UF     DNA Microarrays/CT
E29         0         UF     DNA Microchip/CT
E30         0         UF     DNA Microchips/CT
E31         0         UF     Expression Chip, Gene/CT
E32         0         UF     Expression Chips, Gene/CT
E33         0         UF     Gene Chip/CT
E34         0         UF     Gene Chips/CT
E35         0         UF     Gene Expression Chip/CT
E36         0         UF     Gene Expression Chips/CT
E37         0         UF     Gene Expression Microarray Analysis/CT
E38         0         UF     Microarray Analysis of Gene Expression/CT
E39         0         UF     Microarray, DNA/CT
E40         0         UF     Microarray, Oligonucleotide/CT
E41         0         UF     Microarray, cDNA/CT
E42         0         UF     Microarrays, DNA/CT
E43         0         UF     Microarrays, Oligonucleotide/CT
E44         0         UF     Microarrays, cDNA/CT
E45         0         UF     Microchip, DNA/CT
E46         0         UF     Microchips, DNA/CT
E47         0         UF     OLIGONUCLEOTIDE ARRAY SEQ ANAL/CT
E48         0         UF     Oligodeoxyribonucleotide Array Sequence Analysis/CT
E49         0         UF     Oligonucleotide Array/CT
E50         0         UF     Oligonucleotide Arrays/CT
E51         0         UF     Oligonucleotide Microarray/CT
E52         0         UF     Oligonucleotide Microarrays/CT
E53         0         UF     Sequence Analysis, Oligonucleotide Array/CT
E54         0         UF     Sequencing By Hybridization/CT
E55         0         UF     Sequencing By Hybridizations/CT
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E56          0        UF    cDNA Array/CT
E57          0        UF    cDNA Arrays/CT
E58          0        UF    cDNA Microarray/CT
E59          0        UF    cDNA Microarrays/CT
E60        765        RT    Combinatorial Chemistry Techniques/CT
E61       2504        RT    Gene Expression Profiling/CT
E62       9957        RT    Oligonucleotide Probes/CT
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     (FILE 'MEDLINE' ENTERED AT 08:29:42 ON 14 MAR 2002)
               DEL HIS Y

     FILE 'HCAPLUS' ENTERED AT 08:32:58 ON 14 MAR 2002

     FILE 'REGISTRY' ENTERED AT 08:32:59 ON 14 MAR 2002
               E POLYDIACETYLENE/CN
L1           1 S E3
               E DIACETYLENE/CN
L2           1 S E3
               E E10

     FILE 'HCAPLUS' ENTERED AT 08:33:50 ON 14 MAR 2002
L3        3166 S L1 OR L2 OR POLYDIACEYLENE OR DIACETYLENE
L4        4645 S L3 OR POLYDIACETYLENE
L5          17 S L4 (L) BACKBONE
L6          23 S L4 (L) BACKBONE#
L7      116088 S ASSAY? OR IMMUNOASSAY?
L8      177783 S FLUORES? OR IMMUNOFLUORES?
L9           1 S L6 AND (L7 OR L8)
L10       2925 S (POLYDIACETYLENE OR DIACETYLENE)/AB
L11       5411 S L10 OR L4
L12      24062 S ARRAY?
L13         52 S L4 (L) (ARRAY# OR SUBSTRATE# OR SUPPORT#)
L14          3 S L13 AND (L7 OR L8)
L15         12 S L4 AND L7
L16          2 S L15 AND L8
L17       2772 S POLYDIACETYLENE#
L18       4964 S L17 OR L4
L19        132 S L18 AND (L7 OR L8)
L20          4 S L19 (L) (ARRAY# OR SUBSTRATE# OR SUPPORT#)
L21         54 S L9 OR L13 OR L16 OR L20
L22          5 S L9 OR L14 OR L16 OR L20
L23         10 S L15 NOT L22
L24       3369 S ANALYTE? (L) (ANALYSIS OR ANST/RL OR ANT/RL OR DETECT?  OR ID
L25          7 S L24 AND (L10 OR L18)
L26         11 S L22 OR L25
L27          7 S L15 NOT L26

     FILE 'REGISTRY' ENTERED AT 08:43:03 ON 14 MAR 2002

     FILE 'REGISTRY' ENTERED AT 08:43:07 ON 14 MAR 2002

     FILE 'HCAPLUS' ENTERED AT 08:43:19 ON 14 MAR 2002
L28      636473 S ANTIBOD? OR ENZYM? OR TOXIN#
L29       80350 S L28 (L) (ANALYSIS OR ANST/RL OR ANT/RL OR DETECT?)
L30          24 S L29 AND (L10 OR L18)
L31           3 S L30 AND L8
L32           1 S L31 NOT (L27 OR L26)

=> d que l31;d his l32
L1           1 SEA FILE=REGISTRY ABB=ON  POLYDIACETYLENE/CN
L2           1 SEA FILE=REGISTRY ABB=ON  DIACETYLENE/CN
L3        3166 SEA FILE=HCAPLUS ABB=ON  L1 OR L2 OR POLYDIACEYLENE/OBI OR
               DIACETYLENE/OBI
L4        4645 SEA FILE=HCAPLUS ABB=ON  L3 OR POLYDIACETYLENE/OBI
L8      177783 SEA FILE=HCAPLUS ABB=ON  FLUORES?/OBI OR IMMUNOFLUORES?/OBI
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L10        2925 SEA FILE=HCAPLUS ABB=ON  (POLYDIACETYLENE OR DIACETYLENE)/AB
L17        2772 SEA FILE=HCAPLUS ABB=ON  POLYDIACETYLENE#/OBI
L18        4964 SEA FILE=HCAPLUS ABB=ON  L17 OR L4
L28      636473 SEA FILE=HCAPLUS ABB=ON  ANTIBOD?/OBI OR ENZYM?/OBI OR
                TOXIN#/OBI
L29       80350 SEA FILE=HCAPLUS ABB=ON  L28 (L) (ANALYSIS/OBI OR ANST/RL OR
                ANT/RL OR DETECT?/OBI)
L30          24 SEA FILE=HCAPLUS ABB=ON  L29 AND (L10 OR L18)
L31           3 SEA FILE=HCAPLUS ABB=ON  L30 AND L8


     (FILE 'HCAPLUS' ENTERED AT 08:43:19 ON 14 MAR 2002)
L32           1 S L31 NOT (L27 OR L26)

=> d all

L32  ANSWER 1 OF 1  HCAPLUS  COPYRIGHT 2002 ACS
AN   2000:790686  HCAPLUS
DN   133:331759
TI   Method for detecting biological agents
IN   Chen, Liaohai; Mcbranch, Duncan W.; Wang, Hsing-Lin; Whitten, David G.
PA   The Regents of the University of California, USA
SO   PCT Int. Appl., 38 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
IC   ICM  C12Q001-68
     ICS  C12Q001-70; G01N021-64; G01N033-00; G01N033-53; G01N033-531;
          G01N033-533; G01N033-543; C07H021-02; C07H021-04; C12N015-00;
          B05D001-18; B01J013-00
CC   9-1 (Biochemical Methods)
FAN.CNT 1
     PATENT NO.          KIND  DATE          APPLICATION NO.  DATE
     ----------          ----  --------      ---------------  --------
PI   WO 2000066790       A1    20001109      WO 2000-US12423  20000504
         W:  AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU,
             CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL,
             IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,
             MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,
             SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY,
             KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,
             DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,
             CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
     EP 1097242          A1    20010509      EP 2000-928892   20000504
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO
PRAI US 1999-132556      P     19990505
     WO 2000-US12423     W     20000504
AB   A sensor is provided including a polymer capable of having an alterable
     measurable property from the group of luminescence and elec. cond., the
     polymer having an intermediate combination of a recognition element, a
     tethering element and a property-altering element bound thereto and
     capable of altering the measurable property, the intermediate combination
     adapted for subsequent sepn. from the polymer upon exposure to an agent
     having an affinity for binding to the recognition element whereupon the
     sepn. of the intermediate combination from the polymer results in a
     detectable change in the alterable measurable property, and, a means of
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detecting said detectable change in the alterable measurable property.
ST detecting biol agent
IT Atoms
(Divalent; method for detecting biol. agents)
IT Gels
(Micro porous; method for detecting biol. agents)
IT Polyanilines
RL: DEV (Device component use); USES (Uses)
(and derivs.; method for detecting biol. agents)
IT Ligands
RL: DEV (Device component use); USES (Uses)
(chem.; method for detecting biol. agents)
IT Polymers, uses
RL: DEV (Device component use); USES (Uses)
(conjugated; method for detecting biol. agents)
IT Immunoglobulins
RL: DEV (Device component use); USES (Uses)
(fragments; method for detecting biol. agents)
IT Affinity
Bacteria (Eubacteria)
Biosensors
Cell
Dissolution
Electric conductivity
Energy transfer
Fluorescence
Fluorescent dyes
Fluorometry
Luminescence
Luminescence spectroscopy
Microorganism
Optical fibers
Polyelectrolytes
Sensors
Separation
Solutions
Test kits
Virus
(method for detecting biol. agents)
IT **Antibodies**
Antigens
Coordination compounds
Enzymes, uses
Glycolipids
Nucleic acids
Oligonucleotides
Peptide nucleic acids
Plastics, uses
Poly(arylenealkenylenes)
Polyacetylenes, uses
Polydiacetylenes
Polymers, uses
Polysaccharides, uses
Proteins, general, uses
Toxins
RL: DEV (Device component use); USES (Uses)
(method for **detecting** biol. agents)
IT **Fluorescent** substances
(polymers; method for detecting biol. agents)
IT Peptides, uses

RL: DEV (Device component use); USES (Uses)
(polypeptides; method for detecting biol. agents)

IT 229010-56-4, Single bond
RL: ANT (Analyte); ANST (Analytical study)
(method for detecting biol. agents)

IT 58-85-5, Biotin 71-00-1D, Histidine, copper complex 1910-42-5, Methyl viologen 7440-50-8D, Copper, histidine complex 9033-83-4, Polyphenylene 9055-67-8D, Poly(ADP-ribose) polymerase, DNA-binding domain 25067-54-3, Polyfuran 25067-54-3D, Polyfuran, derivs. 25067-58-7, Polyacetylene 25067-59-8, Polyvinyl carbazole 25067-59-8D, Polyvinyl carbazole, derivs. 25233-30-1, Polyaniline 25233-30-1D, Polyaniline, derivs. 25233-34-5, Polythiophene 26009-24-5, Poly(p-phenylene vinylene) 30604-81-0, Polypyrrole 30604-81-0D, Polypyrrole, derivs. 37758-47-7, Ganglioside GM1 78675-98-6, Squaraine 96638-49-2, Poly(phenylene vinylene) 96638-49-2D, Poly(phenylene vinylene), derivs. 125714-86-5 143186-57-6 164658-06-4, Poly(2,5-pyridinediyl-1,2-ethenediyl) 189145-97-9, Poly(pyridinediyl-1,2-ethenediyl)
RL: DEV (Device component use); USES (Uses)
(method for detecting biol. agents)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Chen, L; Proceedings of the National Academy of Science 1999, V96(22), P12287 HCAPLUS
(2) Cubicciotti; US 5656739 A 1997 HCAPLUS
(3) Cubicciotti; US 5739305 A 1998 HCAPLUS
(4) Dattagupta; US 4724202 A 1998 HCAPLUS
(5) Hawa; WO 9913993 A1 1999 HCAPLUS
(6) Molecular Machines Inc; WO 9960169 A1 1999 HCAPLUS
(7) Rathbone, D; Tetrahedron Letters 2000, V41, P123 HCAPLUS
(8) Research Corporation Technologies Inc; WO 9641173 A1 1996 HCAPLUS
(9) Suarez-Rodriguez, J; Analytica Chimica Acta 2000, V405, P67 HCAPLUS

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=> d his

     (FILE 'MEDLINE' ENTERED AT 08:29:42 ON 14 MAR 2002)
               DEL HIS Y

     FILE 'HCAPLUS' ENTERED AT 08:32:58 ON 14 MAR 2002

     FILE 'REGISTRY' ENTERED AT 08:32:59 ON 14 MAR 2002
                 E POLYDIACETYLENE/CN
L1             1 S E3
                 E DIACETYLENE/CN
L2             1 S E3
                 E E10

     FILE 'HCAPLUS' ENTERED AT 08:33:50 ON 14 MAR 2002
L3          3166 S L1 OR L2 OR POLYDIACEYLENE OR DIACETYLENE
L4          4645 S L3 OR POLYDIACETYLENE
L5            17 S L4 (L) BACKBONE
L6            23 S L4 (L) BACKBONE#
L7        116088 S ASSAY? OR IMMUNOASSAY?
L8        177783 S FLUORES? OR IMMUNOFLUORES?
L9             1 S L6 AND (L7 OR L8)
L10         2925 S (POLYDIACETYLENE OR DIACETYLENE)/AB
L11         5411 S L10 OR L4
L12        24062 S ARRAY?
L13           52 S L4 (L) (ARRAY# OR SUBSTRATE# OR SUPPORT#)
L14            3 S L13 AND (L7 OR L8)
L15           12 S L4 AND L7
L16            2 S L15 AND L8
L17         2772 S POLYDIACETYLENE#
L18         4964 S L17 OR L4
L19          132 S L18 AND (L7 OR L8)
L20            4 S L19 (L) (ARRAY# OR SUBSTRATE# OR SUPPORT#)
L21           54 S L9 OR L13 OR L16 OR L20
L22            5 S L9 OR L14 OR L16 OR L20
L23           10 S L15 NOT L22
L24         3369 S ANALYTE? (L) (ANALYSIS OR ANST/RL OR ANT/RL OR DETECT?  OR ID
L25            7 S L24 AND (L10 OR L18)
L26           11 S L22 OR L25
L27            7 S L15 NOT L26

     FILE 'REGISTRY' ENTERED AT 08:43:03 ON 14 MAR 2002

     FILE 'REGISTRY' ENTERED AT 08:43:07 ON 14 MAR 2002

     FILE 'HCAPLUS' ENTERED AT 08:43:19 ON 14 MAR 2002
L28        636473 S ANTIBOD? OR ENZYM? OR TOXIN#
L29         80350 S L28 (L) (ANALYSIS OR ANST/RL OR ANT/RL OR DETECT?)
L30            24 S L29 AND (L10 OR L18)
L31             3 S L30 AND L8
L32             1 S L31 NOT (L27 OR L26)
```

```
=> fil reg
FILE 'REGISTRY' ENTERED AT 08:43:07 ON 14 MAR 2002
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PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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STRUCTURE FILE UPDATES:   12 MAR 2002  HIGHEST RN 400707-37-1
DICTIONARY FILE UPDATES:  12 MAR 2002  HIGHEST RN 400707-37-1

TSCA INFORMATION NOW CURRENT THROUGH July 7, 2001

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Calculated physical property data is now available.  See HELP PROPERTIES
for more information.  See STNote 27, Searching Properties in the CAS
Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

The P indicator for Preparations was not generated for all of the
CAS Registry Numbers that were added to the H/Z/CA/CAplus files between
12/27/01 and 1/23/02.  Use of the P indicator in online and SDI searches
during this period, either directly appended to a CAS Registry Number
or by qualifying an L-number with /P, may have yielded incomplete results.
As of 1/23/02, the situation has been resolved.  Also, note that searches
conducted using the PREP role indicator were not affected.

Customers running searches and/or SDIs in the H/Z/CA/CAplus files
incorporating CAS Registry Numbers with the P indicator between 12/27/01
and 1/23/02, are encouraged to re-run these strategies.  Contact the
CAS Help Desk at 1-800-848-6533 in North America or 1-614-447-3698,
worldwide, or send an e-mail to help@cas.org for further assistance or to
receive a credit for any duplicate searches.

=> d que l1;d l1
L1             1 SEA FILE=REGISTRY ABB=ON  POLYDIACETYLENE/CN



L1   ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2002 ACS
RN   27987-87-7  REGISTRY
CN   1,3-Butadiyne, homopolymer (9CI)  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   Butadiyne, polymers (8CI)
OTHER NAMES:
CN   Butadiyne homopolymer
CN   Diacetylene polymer
CN   Poly(1,3-butadiyne)
CN   Polybutadiyne
CN   Polydiacetylene
CN   PTS
MF   (C4 H2)x
CI   PMS, COM
PCT  Polyacetylene, Polyphenyl, Polyphenyl formed
LC   STN Files:   AGRICOLA, BIOSIS, CA, CAPLUS, CEN, CIN, MEDLINE, PIRA, PROMT,
       TOXCENTER, USPATFULL, VTB
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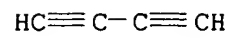
CM 1

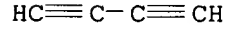
CRN 460-12-8
CMF C4 H2



339 REFERENCES IN FILE CA (1967 TO DATE)
33 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
340 REFERENCES IN FILE CAPLUS (1967 TO DATE)

=> d que l2;d l2
L2 1 SEA FILE=REGISTRY ABB=ON DIACETYLENE/CN

L2 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2002 ACS
RN 460-12-8 REGISTRY
CN 1,3-Butadiyne (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Butadiyne (8CI)
OTHER NAMES:
CN Biacetylene
CN Biethynyl
CN **Diacetylene**
FS 3D CONCORD
MF C4 H2
CI COM
LC STN Files: AGRICOLA, BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CHEMINFORMRX, CHEMLIST, CIN, CSNB, DETHERM*, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HODOC*, IFICDB, IFIPAT, IFIUDB, NIOSHTIC, PIRA, PROMT, SPECINFO, TOXCENTER, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: EINECS**, NDSL**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1001 REFERENCES IN FILE CA (1967 TO DATE)
116 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1004 REFERENCES IN FILE CAPLUS (1967 TO DATE)
34 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 08:43:19 ON 14 MAR 2002
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1907 - 14 Mar 2002 VOL 136 ISS 11
FILE LAST UPDATED: 12 Mar 2002 (20020312/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

The P indicator for Preparations was not generated for all of the CAS Registry Numbers that were added to the CAS files between 12/27/01 and 1/23/02. As of 1/23/02, the situation has been resolved. Searches and/or SDIs in the H/Z/CA/CAplus files incorporating CAS Registry Numbers with the P indicator executed between 12/27/01 and 1/23/02 may be incomplete. See the NEWS message on this topic for more information.
'OBI' IS DEFAULT SEARCH FIELD FOR 'HCAPLUS' FILE

=> d his l3-

(FILE 'REGISTRY' ENTERED AT 08:32:59 ON 14 MAR 2002)
E E10

FILE 'HCAPLUS' ENTERED AT 08:33:50 ON 14 MAR 2002

L3	3166	S	L1 OR L2 OR POLYDIACEYLENE OR DIACETYLENE
L4	4645	S	L3 OR POLYDIACETYLENE
L5	17	S	L4 (L) BACKBONE
L6	23	S	L4 (L) BACKBONE#
L7	116088	S	ASSAY? OR IMMUNOASSAY?
L8	177783	S	FLUORES? OR IMMUNOFLUORES?
L9	1	S	L6 AND (L7 OR L8)
L10	2925	S	(POLYDIACETYLENE OR DIACETYLENE)/AB
L11	5411	S	L10 OR L4
L12	24062	S	ARRAY?
L13	52	S	L4 (L) (ARRAY# OR SUBSTRATE# OR SUPPORT#)
L14	3	S	L13 AND (L7 OR L8)
L15	12	S	L4 AND L7
L16	2	S	L15 AND L8
L17	2772	S	POLYDIACETYLENE#
L18	4964	S	L17 OR L4
L19	132	S	L18 AND (L7 OR L8)
L20	4	S	L19 (L) (ARRAY# OR SUBSTRATE# OR SUPPORT#)
L21	54	S	L9 OR L13 OR L16 OR L20
L22	5	S	L9 OR L14 OR L16 OR L20
L23	10	S	L15 NOT L22
L24	3369	S	ANALYTE? (L) (ANALYSIS OR ANST/RL OR ANT/RL OR DETECT? OR ID
L25	7	S	L24 AND (L10 OR L18)
L26	11	S	L22 OR L25

L27 7 S L15 NOT L26

FILE 'REGISTRY' ENTERED AT 08:43:03 ON 14 MAR 2002

FILE 'REGISTRY' ENTERED AT 08:43:07 ON 14 MAR 2002

FILE 'HCAPLUS' ENTERED AT 08:43:19 ON 14 MAR 2002

=> d .ca l26 1-11;d .ca l27 1-7

L26 ANSWER 1 OF 11 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:772087 HCAPLUS
DOCUMENT NUMBER: 135:341173
TITLE: Nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes
INVENTOR(S): Charych, Deborah H.; Jonas, Ulrich
PATENT ASSIGNEE(S): Regents of the University of California, USA
SOURCE: U.S., 96 pp., Cont.-in-part of U.S. Ser. No. 461,509.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 11
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6306598	B1	20011023	US 1999-337973	19990621
US 6001556	A	19991214	US 1996-592724	19960126
US 6183772	B1	20010206	US 1996-609312	19960301
US 6022748	A	20000208	US 1997-920501	19970829
US 6080423	A	20000627	US 1997-944257	19971006
US 6180135	B1	20010130	US 1997-944323	19971006
US 2001026915	A1	20011004	US 2000-734410	20001211

PRIORITY APPLN. INFO.:
US 1992-976697 A2 19921113
US 1993-159927 A2 19931130
US 1994-289384 B2 19940811
US 1994-289384 B2 19940811
US 1994-328237 B2 19941024
US 1995-389475 B3 19950213
US 1995-389475 B2 19950213
US 1996-592724 A3 19960126
US 1996-609312 A2 19960301
US 1997-38383 P 19970214
US 1997-39749 P 19970303
US 1997-50496 P 19970623
US 1997-920501 A3 19970829
US 1997-944323 A2 19971006
US 1998-23898 A2 19980213
US 1998-33557 A2 19980302
US 1998-90266 P 19980622
US 1998-103344 A2 19980623
US 1999-461509 A2 19991214
US 2000-500295 A2 20000208
US 1992-982189 B2 19921125
US 1997-944257 A3 19971006
US 1999-337973 A2 19990621
US 1999-170190 P 19991210

AB The present invention relates to methods and compns. for the direct detection of analytes and membrane conformational changes through the

detection of color changes in biopolymeric materials. In particular, the present invention provides for the direct colorimetric detection of analytes using nucleic acid ligands at surfaces of **polydiacetylene** liposomes and related mol. layer systems. Liposomes were prepd. from a lipid mixt. of 95% 5,7-docsoadiynoic acid and 5% 5,7-docosadiynoate succinimide. The liposome soln. was photopolymd. with UV light (254 nm) and then reacted with RGGGAATTCGTR (R = OP(OH)(O)OCH2(CH2OH)CH(CH2)4NH2) to make a probe.

IC C12Q001-68; C07H019-00; G01N033-543; G01N021-00
NCL 435006000
CC 9-5 (Biochemical Methods)
Section cross-reference(s): 3
ST nucleic acid coupled colorimetry **polydiacetylene** liposome
IT Neisseria gonorrhoeae
Vibrio vulnificus
(antibodies as ligands in **detection** of; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
IT Amino group
Hydroxyl group
(as head groups in self-assembling monomer; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
IT Amino acids, uses
Carboxylic acids, uses
RL: ARG (Analytical reagent use); PRP (Properties); **ANST (Analytical study)**; USES (Uses)
(as head groups in self-assembling monomer; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
IT Carbohydrates, uses
RL: ARG (Analytical reagent use); **ANST (Analytical study)**; USES (Uses)
(as ligand in biopolymeric **detector**; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
IT Filters
(biopolymer immobilized on support of; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
IT Fluoropolymers, uses
Glass, uses
Mica-group minerals, uses
RL: ARG (Analytical reagent use); DEV (Device component use); **ANST (Analytical study)**; USES (Uses)
(biopolymer immobilized on support of; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
IT Films
(biopolymeric; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
IT Toxins
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(cholera; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
IT Molecular recognition
(complexes; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene**

liposomes)
IT Blood products
(components, **detection** of; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
IT Sialic acids
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**
(conjugates, **diacetylene** derivs.; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
IT Lipids, biological studies
Nucleic acids
RL: ARG (Analytical reagent use); BPR (Biological process); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)
(conjugates; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
IT Bacteria (Eubacteria)
Drugs
Fungi
Human immunodeficiency virus 1
Influenza virus
Ions
Parasite
Pathogen
Virus
(**detection** of; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
IT Amino acids, **analysis**
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**
(**diacetylene** derivs.; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
IT DNA
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(double-stranded; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
IT Toxins
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(enterotoxins, Escherichia; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
IT Disease, animal
(genetic; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
IT Functional groups
Molecules
(hydrophobic; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
IT Antibodies
RL: ARG (Analytical reagent use); DEV (Device component use); SPN (Synthetic preparation); **ANST (Analytical study)**; PREP (Preparation); USES (Uses)
(immobilized; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene**

liposomes)
IT Erythrocyte
(in malarial Plasmodium **detection** with sialic acid-contg. PDA films; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
IT Genetic element
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(intron, RNA; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
IT Organelle
(lamella; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
IT Aldehydes, properties
Amines, properties
Thiols (organic), properties
RL: PRP (Properties)
(nucleic acid ligands linked to polymd. self-assembling lipids through; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
IT Air **analysis**
Bacillus subtilis
Biosensors
Blood **analysis**
Chelating agents
Chromophores
Coils
Colorimetry
Conformation
Dopants
Electron acceptors
Electron donors
Escherichia coli
Functional groups
Helix (conformation)
Liposomes
Membranes, nonbiological
Nucleic acid hybridization
Pharmaceutical **analysis**
Plasmodium (malarial genus)
Self-assembled monolayers
Surfactants
Temperature
Urine **analysis**
Vibrio cholerae
pH
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
IT Agglutinins and Lectins
Antibodies
DNA
Double stranded RNA
Enzymes, **analysis**
Hormones, animal, **analysis**
Nucleic acids
Receptors
Transcription factors
Volatile organic compounds

mRNA
rRNA
tRNA
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT Antigens
Proteins, general, **analysis**
RL: **ANT (Analyte)**; ARG (Analytical reagent use); **ANST (Analytical study)**; USES (Uses)
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT Fibers
Sialic acids
Trisaccharides
RL: ARG (Analytical reagent use); **ANST (Analytical study)**; USES (Uses)
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT Biopolymers
Ligands
RL: ARG (Analytical reagent use); BPR (Biological process); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT Probes (nucleic acid)
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); **ANST (Analytical study)**; PREP (Preparation); USES (Uses)
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT Cardiolipins
Ceramides
Cerebrosides
Lysophosphatidylcholines
Phosphatidic acids
Phosphatidylcholines, **analysis**
Phosphatidylethanolamines, **analysis**
Phosphatidylglycerols
Phosphatidylinositols
Phosphatidylserines
Polyoxyalkylenes, **analysis**
Sphingomyelins
Steroids, **analysis**
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT Immobilization, biochemical
(of biopolymer on support; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT Dot blot hybridization
(reverse; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT Lipids, biological studies
RL: ARG (Analytical reagent use); BPR (Biological process); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)
(self-assembling; nucleic acid-coupled colorimetric **analyte**

detectors using self-assembling **polydiacetylene** liposomes)

IT Holders
(supports, biopolymer immobilized on; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT Oligosaccharides, uses
RL: ARG (Analytical reagent use); **ANST (Analytical study)**; USES (Uses)
(tetrasaccharides; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT Organelle
(tubule; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT Detergents
(zwitterionic; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 7440-57-5, Gold, uses 7631-86-9, Silica, uses 9002-84-0, Teflon 9002-88-4, Polyethylene 9003-53-6, Polystyrene 9012-36-6, Sepharose 9041-35-4, Sephadex G 25 25014-41-9, Polyacrylonitrile
RL: ARG (Analytical reagent use); DEV (Device component use); **ANST (Analytical study)**; USES (Uses)
(biopolymer immobilized on support of; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 7440-21-3, Silicon, uses
RL: ARG (Analytical reagent use); DEV (Device component use); **ANST (Analytical study)**; USES (Uses)
(chips, biopolymer immobilized on; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 9001-51-8, Hexokinase
RL: RCT (Reactant)
(immobilization on PDA and NHS-PDA monolayer slides; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 66990-32-7, 10,12-Pentacosadiynoic acid 138305-24-5, 5,7-Pentacosadiynoic acid 178560-65-1, 5,7-Docosadiynoic acid
RL: ARG (Analytical reagent use); PRP (Properties); RCT (Reactant); **ANST (Analytical study)**; USES (Uses)
(in self-assembling monomer; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 369375-91-7
RL: ARG (Analytical reagent use); RCT (Reactant); **ANST (Analytical study)**; USES (Uses)
(liposomes contg.; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 50-99-7, D-Glucose, **analysis** 9002-61-3, Chorionic gonadotropin 9026-81-7, Nuclease 9031-56-5, Ligase 37209-28-2, Bungarotoxin 120178-12-3, Telomerase 344315-57-7, Polymerase
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 9001-84-7, Phospholipase A2
RL: **ANT (Analyte)**; ARG (Analytical reagent use); BAC (Biological

activity or effector, except adverse); **ANST (Analytical study)**; BIOL (Biological study); USES (Uses)
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 9001-86-9, Phospholipase C 9001-87-0, Phospholipase D
RL: **ANT (Analyte)**; BAC (Biological activity or effector, except adverse); **ANST (Analytical study)**; BIOL (Biological study)
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 56-23-5, Carbon tetrachloride, **analysis** 60-29-7, Diethylether, **analysis** 64-17-5, Ethanol, **analysis** 67-63-0, Isopropanol, **analysis** 67-66-3, Chloroform, **analysis** 71-36-3, 1-Butanol, **analysis** 71-43-2, Benzene, **analysis** 107-06-2, Ethylene dichloride, **analysis** 108-88-3, Toluene, **analysis** 110-82-7, Cyclohexane, **analysis** 111-27-3, 1-Hexanol, **analysis** 111-87-5, 1-Octanol, **analysis**
RL: **ANT (Analyte)**; PRP (Properties); **ANST (Analytical study)**
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 71-00-1D, L-Histidine, conjugates with amine-coupled PDA 18656-38-7, Dmpc 37758-47-7, Ganglioside GM1 104443-58-5, Ganglioside GT1b
RL: ARG (Analytical reagent use); **ANST (Analytical study)**; USES (Uses)
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 199106-13-3, MJ33
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); **ANST (Analytical study)**; BIOL (Biological study); USES (Uses)
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 370159-23-2 370159-24-3
RL: ARG (Analytical reagent use); PRP (Properties); RCT (Reactant); **ANST (Analytical study)**; USES (Uses)
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 370649-87-9P
RL: ARG (Analytical reagent use); PRP (Properties); SPN (Synthetic preparation); **ANST (Analytical study)**; PREP (Preparation); USES (Uses)
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 57-88-5, Cholesterol, **analysis** 63-42-3D, Lactose, **diacetylene** derivs. 83-44-3 123-78-4 151-21-3, Sodium dodecyl sulfate, **analysis 460-12-8D**, **Diacetylene**, derivs. 9036-19-5, Octoxynol 25322-68-3, Polyethylene glycol 29557-51-5, Dodecylphosphocholine 34344-66-6 58846-77-8, Decylglucoside 140708-39-0 369375-82-6
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 66990-30-5, 10,12-Tricosadiynoic acid
RL: ARU (Analytical role, unclassified); RCT (Reactant); **ANST (Analytical study)**
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 7646-85-7, Zinc chloride, biological studies
RL: BAC (Biological activity or effector, except adverse); BIOL

(Biological study)
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 10108-64-2, Cadmium chloride (CdCl2)
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 146064-06-4P 369375-83-7P 369375-93-9P
RL: BPR (Biological process); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 125110-42-1D, immobilized and protected 205266-20-2 370159-17-4
RL: PRP (Properties); RCT (Reactant)
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 228723-67-9P 368951-38-6P 368951-39-7P 369375-90-6P 369375-99-5P 370159-18-5DP, immobilized and protected 370159-19-6P 370159-20-9P 370159-21-0P 370159-22-1P 370649-88-0DP, immobilized and protected
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 125110-43-2P 370649-89-1P 370649-90-4P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 108-24-7, Acetic anhydride 124-09-4, Hexamethylenediamine, reactions 141-43-5, Ethanolamine, reactions 302-01-2, Hydrazine, reactions 681-84-5, Tetramethylorthosilicate 929-75-9, Tetraethylene glycol diamine 6066-82-6, N-Hydroxy succinimide 53053-08-0 75495-27-1 136766-23-9 146064-10-0 369375-96-2
RL: RCT (Reactant)
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 136766-21-7P 137870-33-8P 146064-07-5P 146064-08-6P 146064-09-7P 369375-84-8P 369375-86-0P 369375-88-2P 369375-94-0P 369375-97-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 88373-04-0P 146064-05-3P 369375-89-3P 369375-98-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 151014-05-0, 4; PN: US6306598 SEQID: 1 unclaimed DNA
RL: PRP (Properties)
(unclaimed nucleotide sequence; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 2 OF 11 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:713655 HCAPLUS
DOCUMENT NUMBER: 135:269637
TITLE: Method for **detecting** an **analyte** by **fluorescence**
INVENTOR(S): Reppy, Mary A.; Sporn, Sarah A.; Saller, Charles F.
PATENT ASSIGNEE(S): Analytical Biological Services, Inc., USA

SOURCE: PCT Int. Appl., 54 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001071317	A1	20010927	WO 2001-US8790	20010320

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2000-190091 P 20000320

AB Methods for detecting an analyte are described which entail contacting two-dimensional or three-dimensional arrays of a **polydiacetylene** backbone having incorporated in the array a substrate which has a direct affinity for, can bind with, or can react with the analyte and detecting changes in the fluorescence of the array to indicate the presence of the analyte.

IC ICM G01N021-00
ICS G01N021-01; G01N021-17; G01N031-20; G01N033-544; G01N033-538; G01N033-567; G01N033-537; G01N033-543; G01N033-53; G01N033-546; G01N033-552; C12M001-00; C12N001-00; C12N001-20; C12N011-00; C12Q001-68; C07H021-04
CC 9-5 (Biochemical Methods)
Section cross-reference(s): 73
ST **fluorescence assay polydiacetylene** bound **substrate**

IT Toxins
RL: ANT (Analyte); ANST (Analytical study)
(cholera; **fluorescence assays** using **substrates** incorporated in **polydiacetylene backbones**)

IT Antibodies
RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(conjugates; **fluorescence assays** using **substrates** incorporated in **polydiacetylene backbones**)

IT Liposomes
(**fluorescence assays** using **substrates** incorporated in **polydiacetylene backbones**)

IT Enzymes, analysis
RL: ANT (Analyte); ANST (Analytical study)
(**fluorescence assays** using **substrates** incorporated in **polydiacetylene backbones**)

IT **Immunoassay**
(**fluorescence; fluorescence assays** using **substrates** incorporated in **polydiacetylene backbones**)

IT **Immunoassay**
(immunofluorometric; **fluorescence assays** using

substrates incorporated in **polydiacetylene backbones**)

IT 121207-31-6, BODIPY 493/503
RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(BODIPY 493/503; **fluorescence assays** using **substrates** incorporated in **polydiacetylene backbones**)

IT 209340-49-8
RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(BODIPY 630/650; **fluorescence assays** using **substrates** incorporated in **polydiacetylene backbones**)

IT 217190-24-4, BODIPY TR cadaverine
RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(BODIPY TR cadaverine; **fluorescence assays** using **substrates** incorporated in **polydiacetylene backbones**)

IT 203250-31-1, Dapoxyl (2-aminoethyl)sulfonamide
RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(Dapoxyl (2-aminoethyl)sulfonamide; **fluorescence assays** using **substrates** incorporated in **polydiacetylene backbones**)

IT 15492-51-0 15522-71-1, Tris(2,2,6,6,-tetramethyl-3,5-heptanedionato)europium 26093-31-2, 7-Amino-4-methylcoumarin 37758-47-7, Ganglioside GM1 64821-29-0, 16-(9-Anthroyloxy)palmitic acid 67000-89-9, 1-Pyrenebutanol 155773-68-5D, conjugates with antibodies 362596-00-7
RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(**fluorescence assays** using **substrates** incorporated in **polydiacetylene backbones**)

IT 18194-24-6D, Dimyristoyl phosphatidylcholine, reaction products with tricosadiynoic acid 66990-30-5D, 10,12-Tricosadiynoic acid, reaction products with dimyristoyl phosphatidylcholine 66990-32-7D, 10,12-Pentacosadiynoic acid, UV-crosslinked 178560-65-1, 5,7-Docosadiynoic acid
RL: ARU (Analytical role, unclassified); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(**fluorescence assays** using **substrates** incorporated in **polydiacetylene backbones**)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 3 OF 11 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:315953 HCAPLUS
DOCUMENT NUMBER: 135:92926
TITLE: Influence of **Substrate** Properties on the Topochemical Polymerization of **Diacetylene** Monolayers
AUTHOR(S): Britt, D. W.; Hofmann, U. G.; Moebius, D.; Hell, S. W.
CORPORATE SOURCE: Max-Planck-Institute for Biophysical Chemistry,

Goettingen, D-37070, Germany
SOURCE: Langmuir (2001), 17(12), 3757-3765
CODEN: LANGD5; ISSN: 0743-7463
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The influence of the underlying substrate on the UV initiated polymn. of diacetylene lipid monolayers was studied using absorption spectroscopy and Brewster angle microscopy (BAM). The diacetylenes studied, having basic head groups are dimethylbis[2-(hexacosane-10,12-diynoyloxy)ethyl]ammonium bromide (BRONCO) and hexacosa-10,12-diynoic acid [2-[2-[2-(2-aminoethoxy)ethoxy]ethoxy]ethyl]amide. The substrate layers were octadecyltrichlorosilane (OTS), 10,12-pentacosadiynoic acid, and arachidic acid. The lipid/substrate affinity was tuned through choice of lipid head group and substrate properties. Lipids with pos. charged head groups, which readily polymd. into both blue (6.degree.) and red (16.degree.) polymer forms at the air/water interface, failed to polymerize when transferred to glass or hydrophobic glass (head groups facing ambient) at either temp. The BAM data revealed that the diacetylene film was disordered on hydrophobic glass, which likely impeded the topochem. polymn. On glass, however, BAM data showed a highly cryst. film identical to that seen at the air/water interface, suggesting that strong interactions between the pos. charged lipid head groups and the glass inhibited polymn. in this case. In agreement, when the lipid/substrate interactions were reduced, either by introducing a cadmium arachidate bilayer between the diacetylene film and the glass or by substituting mica for glass, a limited polymn. occurred, forming the red film exclusively. As a further test, monolayers of acidic diacetylene lipids were deposited on glass. In this case polymn. was possible in both blue and red forms but diminished as the transferred film was aged. These results suggest that a strong lipid/substrate affinity may impede the topochem. polymn., possibly by restricting the mobility of the lipids. By investigating polymn. as a function of substrate and head group chem., several factors influencing the lability of diacetylene films toward topochem. polymn. were elucidated.

CC 35-4 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 66
ST **diacetylene** lipid monolayer topochem polymn **substrate** effect; affinity lipid **substrate** polyacetylene crystallinity charge effect

IT Polymer morphology
(cryst.; **substrate** charge and polarity effects on topochem. polymn. of lipid **diacetylene** monolayers and on crystallinity of polyacetylenes)

IT Polymerization
(photopolymn., topochem.; **substrate** charge and polarity effects on topochem. polymn. of lipid **diacetylene** monolayers and on crystallinity of polyacetylenes)

IT **Fluorescence**
Glass **substrates**
Photochromism
Thermochromism
Topochemical reaction
(**substrate** charge and polarity effects on topochem. polymn. of lipid **diacetylene** monolayers and on crystallinity of polyacetylenes)

IT **Polydiacetylenes**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(**substrate** charge and polarity effects on topochem. polymn. of lipid **diacetylene** monolayers and on crystallinity of

polyacetylenes)
IT Mica-group minerals, uses
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(**substrate**; **substrate** charge and polarity effects on topochem. polymn. of lipid **diacetylene** monolayers and on crystallinity of polyacetylenes)
IT 66990-32-7, 10,12-Pentacosadiynoic acid 75495-21-5 348576-88-5
RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process)
(monomer; **substrate** charge and polarity effects on topochem. polymn. of lipid **diacetylene** monolayers and on crystallinity of polyacetylenes)
IT 66990-33-8P, 10,12-Pentacosadiynoic acid homopolymer 348576-90-9P, Dimethylbis[2-(hexacosane-10,12-diynoyloxy)ethyl]ammonium bromide-hexacosa-10,12-diynoic acid [2-[2-[2-(2-aminoethoxy)ethoxy]ethoxy]ethyl]amide copolymer
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(**substrate** charge and polarity effects on topochem. polymn. of lipid **diacetylene** monolayers and on crystallinity of polyacetylenes)
IT 112-04-9, Octadecyltrichlorosilane 506-30-9, Arachidic acid 14923-81-0, Cadmium arachidate
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(**substrate**; **substrate** charge and polarity effects on topochem. polymn. of lipid **diacetylene** monolayers and on crystallinity of polyacetylenes)
REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 4 OF 11 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:666967 HCAPLUS
DOCUMENT NUMBER: 133:234740
TITLE: Colorimetric detection method using polymer matrices having lipids
INVENTOR(S): Jelinek, Raz
PATENT ASSIGNEE(S): Ben-Gurion University of the Negev, Israel
SOURCE: PCT Int. Appl., 41 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000055623	A2	20000921	WO 2000-IL158	20000314
WO 2000055623	A3	20010322		
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1161688	A2	20011212	EP 2000-909610	20000314
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				

PRIORITY APPLN. INFO.: IL 1999-129003 A 19990315

WO 2000-IL158 W 20000314

AB A method for detecting the presence of an analyte in a sample, said analyte being chem. non-reactive with lipids or with a polymer having an absorption band which may be shifted from a first wavelength in the visible region to a second wavelength in a visible region, which comprises: (a) providing a polymeric matrix comprising said lipids and said polymer; (b) introducing into said sample or into said polymeric matrix means enabling said analyte to cause a non-chem. change in said polymeric matrix; and (c) contacting the sample with the polymeric matrix and observing a color transition of the matrix, indicating the presence of the analyte. The peptide melittin was detected using a polymer matrix contg. **polydiacetylene** and dimyristoylphosphocholine.

IC ICM G01N033-50

CC 9-5 (Biochemical Methods)
Section cross-reference(s): 79, 80

ST colorimetry assay polymer matrix lipid; peptide melittin colorimetry **polydiacetylene** dimyristoylphosphocholine matrix

IT Cations
Ions
(as **analyte**; colorimetric **detection** method using polymer matrixes having lipids)

IT Membrane, biological
(peptide, as **analyte**; colorimetric **detection** method using polymer matrixes having lipids)

IT Cardiolipins
Lipopolysaccharides
Phosphatidylcholines, preparation
Sphingomyelins
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(polymer matrix with **polydiacetylene**; colorimetric detection method using polymer matrixes having lipids)

IT **Polydiacetylenes**
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(polymer matrix; colorimetric detection method using polymer matrixes having lipids)

IT 57-88-5DP, Cholesterol, polymer matrix with **polydiacetylene** 2001-95-8DP, Valinomycin, polymer matrix with **polydiacetylene** and dimyristoylphosphocholine 2644-64-6DP, Dipalmitoylphosphatidylcholine, polymer matrix with **polydiacetylene** 17090-79-8DP, Monensin, polymer matrix with **polydiacetylene** and dimyristoylphosphocholine 18656-38-7DP, polymer matrix with **polydiacetylene** 20255-95-2DP, polymer matrix with **polydiacetylene** **27987-87-7DP, Polydiacetylene,** polymer matrix 52665-69-7DP, Ionophore A23187, polymer matrix with **polydiacetylene** and dimyristoylphosphocholine 64023-32-1DP, polymer matrix with **polydiacetylene** 85305-88-0DP, Galactosylceramide, polymer matrix with **polydiacetylene**
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(colorimetric detection method using polymer matrixes having lipids)

IT 293749-29-8DP, polymer matrix with **polydiacetylene** and dimyristoylphosphocholine
RL: ARG (Analytical reagent use); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(contg. FLAG epitope; colorimetric detection method using polymer matrixes having lipids)

L26 ANSWER 5 OF 11 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:819529 HCAPLUS
DOCUMENT NUMBER: 132:60102
TITLE: Nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials
INVENTOR(S): Charych, Deborah H.; Jonas, Ulrich
PATENT ASSIGNEE(S): Regents of the University of California, USA
SOURCE: PCT Int. Appl., 176 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 11
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9967423	A1	19991229	WO 1999-US14029	19990622
W: AU, CA, JP				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9947047	A1	20000110	AU 1999-47047	19990622
EP 1112377	A1	20010704	EP 1999-930522	19990622
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				

PRIORITY APPLN. INFO.: US 1998-90266 P 19980622
WO 1999-US14029 W 19990622

AB The present invention relates to methods and compns. for the direct detection of analytes and membrane conformational changes through the detection of color changes in biopolymeric materials. In particular, the present invention provides for the direct colorimetric detection of analytes using nucleic acid ligands at surfaces or **polydiacetylene** liposomes and related mol. layer systems. Synthetic schemes are provided for the prepn. and immobilization of polydiacetylenic materials with various head groups.

IC C12Q001-68; G01N033-53; C12N011-00; C12M001-00; C07H021-04
CC 3-1 (Biochemical Genetics)
Section cross-reference(s): 9
ST nucleic acid coupled colorimetry analysis self assembly **polydiacetylene**
IT Toxins
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(Escherichia coli; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
IT Phosphatidylethanolamines, uses
RL: MOA (Modifier or additive use); USES (Uses)
(N-biotinyl, dopant for biopolymeric materials; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
IT Amines, **analysis**
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**
(allyl, self-assemblying monomers; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
IT Films
Liposomes
(biopolymeric; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
IT Toxins
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(cholera; nucleic acid-coupled colorimetric **analyte**

detectors using self-assembling polydiacetylenic materials)
IT Molecular recognition
(complexes, non-nucleic acid ligand; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
IT Surfactants
(dopant for biopolymeric materials; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
IT Cardiolipins
Ceramides
Cerebrosides
Lysophosphatidylcholines
Phosphatidic acids
Phosphatidylcholines, uses
Phosphatidylethanolamines, uses
Phosphatidylglycerols
Phosphatidylinositols
Phosphatidylserines
Polyoxyalkylenes, uses
Sphingomyelins
Steroids, uses
RL: MOA (Modifier or additive use); USES (Uses)
(dopant for biopolymeric materials; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
IT Functional groups
(hydrophilic groups, non-nucleic acid ligand; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
IT Functional groups
(hydrophobic, non-nucleic acid ligand; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
IT RNA
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(intron; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
IT Chelating agents
Chromophores
Drugs
Electron acceptors
Electron donors
(non-nucleic acid ligand; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
IT Carbohydrates, **analysis**
Proteins, general, **analysis**
Sialic acids
Trisaccharides
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**
(non-nucleic acid ligand; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
IT Bacteria (Eubacteria)
Colorimeters
Colorimetry
Fungi
Hepatitis A virus
Hepatitis B virus

Human herpesvirus
Human herpesvirus 3
Human herpesvirus 4
Human immunodeficiency virus
Human immunodeficiency virus 1
Human poliovirus
Influenza virus
Neisseria gonorrhoeae
Nucleic acid hybridization
Parasite
Pathogen
Rabies virus
Retroviridae
Rhinovirus
Rubella virus
Self-assembly
Vaccinia virus
Variola virus
Vibrio vulnificus
Virus
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)

IT Agglutinins and Lectins
Antibodies
Antigens
DNA
Double stranded RNA
Enzymes, **analysis**
Hormones, animal, **analysis**
Nucleic acids
Receptors
Transcription factors
mRNA
rRNA
tRNA
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)

IT Glycerophospholipids
RL: MOA (Modifier or additive use); USES (Uses)
(phosphatidylmethanols, dopant for biopolymeric materials; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)

IT **Polydiacetylenes**
RL: ARU (Analytical role, unclassified); DEV (Device component use); **ANST (Analytical study)**; USES (Uses)
(polyamide-; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)

IT Polyamides, **analysis**
RL: ARU (Analytical role, unclassified); DEV (Device component use); **ANST (Analytical study)**; USES (Uses)
(**polydiacetylene**-; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)

IT Polymers, **analysis**
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**
(polythiophenes, self-assemblying monomers; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)

IT Alkenes, **analysis**

Alkynes
Imides
Siloxanes (nonpolymeric)
Urethanes
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**
(self-assemblying monomers; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)

IT DNA
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(single-stranded; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)

IT Fluoropolymers, uses
Glass, uses
Mica-group minerals, uses
RL: DEV (Device component use); USES (Uses)
(solid support; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)

IT Oligosaccharides, **analysis**
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**
(tetrasaccharides, non-nucleic acid ligand; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)

IT Ethers, **analysis**
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**
(vinyl, self-assemblying monomers; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)

IT Detergents
(zwitterionic, dopant for biopolymeric materials; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)

IT 66990-32-7P, 10,12-Pentacosadiynoic acid 92266-90-5P, 10,12-Pentacosadiyn-1-ol 120650-77-3P 144314-93-2P 155020-22-7P 162635-75-8P 211996-57-5P 211996-58-6P
RL: ARU (Analytical role, unclassified); DEV (Device component use); SPN (Synthetic preparation); **ANST (Analytical study)**; PREP (Preparation); USES (Uses)
(chem. synthesis of biopolymeric materials; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)

IT 929-75-9, Tetraethylene glycol diamine 136766-23-9
RL: RCT (Reactant)
(chem. synthesis of biopolymeric materials; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)

IT 136766-21-7P 137870-33-8P 146064-05-3P 146064-06-4P 146064-07-5P 146064-08-6P 146064-09-7P 146064-10-0P 228723-67-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(chem. synthesis of biopolymeric materials; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)

IT 57-88-5, Cholesterol, uses 83-44-3 123-78-4, D-erythro-Sphingosine 151-21-3, Sodium dodecyl sulfate, uses **460-12-8D**, **Diacetylene**, derivs. 9036-19-5, Octoxynol 25322-68-3 29557-51-5, Dodecyl phosphocholine 34344-66-6, Polysorbic acid 58846-77-8, Decyl glucoside
RL: MOA (Modifier or additive use); USES (Uses)
(dopant for biopolymeric materials; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling

polydiacetylenic materials)
IT 37758-47-7, Ganglioside GM1 59247-13-1, Ganglioside GT1b
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**
(non-nucleic acid ligand; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
IT 9001-84-7, Phospholipase A2 9001-86-9, Phospholipase C 9001-87-0, Phospholipase D 9002-61-3, Chorionic gonadotropin 9026-81-7, Nuclease 9031-50-9, Nucleotidyltransferase 9031-56-5, Ligase 37209-28-2, Bungarotoxin 120178-12-3, Telomerase
RL: **ANT (Analyte); ANST (Analytical study)**
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
IT 138305-24-5, 5,7-Pentacosadiynoic acid 178560-65-1, 5,7-Docosadiynoic acid
RL: ARU (Analytical role, unclassified); RCT (Reactant); **ANST (Analytical study)**
(self-assembling monomers; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
IT 62-53-3D, Aniline, compds. 79-06-1D, Acrylamide, compds. 79-41-4D, Methacrylic acid, compds. 109-97-7D, Pyrrole, compds. 110-02-1D, Thiophene, compds. 1121-34-2D, Malic anhydride, compds. 19295-34-2D, Vinylpyridinium, compds.
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**
(self-assemblying monomers; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
IT 7440-21-3, Silicon, uses 7440-57-5, Gold, uses 7631-86-9, Silica, uses 9002-84-0, Teflon 9002-88-4, POlyethylene 9003-53-6, Polystyrene 9012-36-6, Sepharose 9014-76-0, Sephadex 25014-41-9D, Polyacrylonitrile, compds.
RL: DEV (Device component use); USES (Uses)
(solid support; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 6 OF 11 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:172649 HCAPLUS
DOCUMENT NUMBER: 130:220147
TITLE: Sol-gel matrixes and their preparation for direct colorimetric **detection** of **analytes**
INVENTOR(S): Charych, Deborah H.; Sasaki, Darryl; Yamanaka, Stacey
PATENT ASSIGNEE(S): Regents of the University of California, USA
SOURCE: PCT Int. Appl., 79 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 11
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9910743	A1	19990304	WO 1998-US17982	19980831

W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

US 6022748	A	20000208	US 1997-920501	19970829
AU 9892116	A1	19990316	AU 1998-92116	19980831
EP 1002234	A1	20000524	EP 1998-944612	19980831

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

PRIORITY APPLN. INFO.: US 1997-920501 A 19970829
WO 1998-US17982 W 19980831

AB The present invention relates to methods and compns. for the direct detection of analytes using color changes that occur in immobilized biopolymeric material in response to selective binding of analytes to their surface. In particular, the present invention provides methods and compns. related to the encapsulation of biopolymeric material into metal oxide glass using the sol-gel method. Liposomes of sialic acid-linked 5,7-docosadiynoic acid polymer entrapped in silicate glass provided a vivid colorimetric response to influenza A virus.

IC ICM G01N033-546
ICS G01N033-552

CC 9-1 (Biochemical Methods)
Section cross-reference(s): 79, 80

IT Bacteria (Eubacteria)
Molecules
Pathogen
(as **analytes**; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT Antibodies
Enzymes, **analysis**
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(as **analytes**; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT Apparatus
(badge, biopolymer encapsulated in sol-gel glass as; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT Ligands
RL: ARG (Analytical reagent use); BPR (Biological process); DEV (Device component use); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)
(biopolymer contg., immobilization of, in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT Self-assembly
(biopolymers from monomers undergoing, immobilization of, in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT Allyl amines
Imides
Polydiacetylenes
Polyolefins
Siloxanes (nonpolymeric)
Urethanes
RL: ARG (Analytical reagent use); BPR (Biological process); DEV (Device component use); RCT (Reactant); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)
(biopolymers from, immobilization of, in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT Molecular recognition

(complexes from, immobilization of, in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT Influenza A virus
(**detection** of, with sol-gel encapsulated sialic acid-linked **polydiacetylene**; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT Cholera toxin
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(**detection** of, with sol-gel encapsulated sialic acid-linked **polydiacetylene**; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT Oxides (inorganic), biological studies
RL: ARG (Analytical reagent use); BPR (Biological process); DEV (Device component use); RCT (Reactant); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)
(glasses, immobilization of biopolymers in; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT Molecules
(hydrophilic, immobilization of, in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT Molecules
(hydrophobic, immobilization of, in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT Chelating agents
Chromophores
Drugs
Electron acceptors
Electron donors
Films
Liposomes
(immobilization of, in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT Receptors
RL: **ANT (Analyte)**; ARG (Analytical reagent use); BPR (Biological process); DEV (Device component use); RCT (Reactant); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)
(immobilization of, in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT Antigens
Biopolymers
Carbohydrates, biological studies
Nucleic acids
Peptides, biological studies
RL: ARG (Analytical reagent use); BPR (Biological process); DEV (Device component use); RCT (Reactant); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)
(immobilization of, in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT Buffers
Sonication
(in immobilization of biopolymers in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection**

of **analytes**)

IT Acids, uses
RL: NUU (Other use, unclassified); USES (Uses)
(in immobilization of biopolymers in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT Antibody immobilization
(in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT Immobilization (molecular)
(of biopolymers in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT Polymers, biological studies
RL: ARG (Analytical reagent use); BPR (Biological process); DEV (Device component use); RCT (Reactant); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)
(polythiophenes, biopolymers from, immobilization of, in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT Oscillators
(quartz; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT Membranes (nonbiological)
(receptors or fragments of, as **analytes**; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT **Analysis**
Colorimetry
Electrodes
Gas **analysis**
Optical fibers
Pharmaceutical **analysis**
Scintillation
Spectroscopy
(sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT Glass, biological studies
RL: ARG (Analytical reagent use); BPR (Biological process); DEV (Device component use); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)
(sol-gel, biopolymer encapsulated in; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT Analytical apparatus
(supported metal oxide glass-immobilized biopolymers; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT 1132-61-2, 3-[N-Morpholino]propanesulfonic acid
RL: NUU (Other use, unclassified); USES (Uses)
(as buffer in immobilization of biopolymers in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT 62-53-3D, Aniline, compds. 79-06-1D, Acrylamide, compds. 109-93-3, Vinylether 109-97-7D, Pyrrole, compds. 110-02-1D, Thiophene, compds. 1121-34-2, Malic anhydride 18358-13-9D, Methacrylate, compds., biological studies 19295-34-2 66990-32-7, 10,12-Pentacosadiynoic acid 138305-24-5, 5,7-Pentacosadiynoic acid 178560-65-1, 5,7-Docosadiynoic acid
RL: ARG (Analytical reagent use); BPR (Biological process); DEV (Device component use); RCT (Reactant); **ANST (Analytical study)**; BIOL

(Biological study); PROC (Process); USES (Uses)
(biopolymers from, immobilization of, in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT 221056-30-0
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(films; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT 681-84-5D, Tetramethylorthosilicate, glasses
RL: ARG (Analytical reagent use); BPR (Biological process); DEV (Device component use); RCT (Reactant); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)
(immobilization of biopolymers in; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT 58-85-5, Biotin
RL: ARG (Analytical reagent use); BPR (Biological process); DEV (Device component use); RCT (Reactant); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)
(immobilization of, in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT 7647-01-0, Hydrochloric acid, uses
RL: NUU (Other use, unclassified); USES (Uses)
(in immobilization of biopolymers in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT 136766-21-7P 146064-08-6P 146064-09-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(in sialic acid ligand attachment to **diacetylene**; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT 37758-47-7, Ganglioside GM1
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(liposomes of or polymd. **diacetylene** contg.; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT 66990-33-8D, sialic acid-linked 212955-17-4D, sialic acid-linked
RL: ARG (Analytical reagent use); BPR (Biological process); PRP (Properties); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)
(liposomes, entrapped in sol-gel glass, influenza virus effect on; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT **27987-87-7P**, **Diacetylene** polymer
RL: SPN (Synthetic preparation); PREP (Preparation)
(liposomes, sol-gel-entrapped; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT 108-24-7 6066-82-6, N-Hydroxysuccinimide 136766-23-9
RL: RCT (Reactant)
(reaction of, in sialic acid ligand attachment to **diacetylene**; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT 141-43-5DP, Ethanolamine, reaction products with N-hydroxysuccinimide-modified **diacetylene** deriv. polymers 929-75-9DP, Tetraethylene glycol diamine, reaction products with N-hydroxysuccinimide-modified **diacetylene** deriv. polymers
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(reaction of, in sialic acid ligand attachment to **diacetylene**; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)

IT **460-12-8, Diacetylene**
RL: RCT (Reactant)
(sialic acid ligand attachment to; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)
IT 56-23-5, Carbon tetrachloride, **analysis** 60-29-7, Diethylether, **analysis** 67-66-3, **analysis** 71-36-3, 1-Butanol, **analysis** 71-43-2, Benzene, **analysis** 75-09-2, Dichloromethane, **analysis** 108-88-3, Toluene, **analysis** 110-82-7, Cyclohexane, **analysis** 111-27-3, 1-Hexanol, **analysis** 111-87-5, 1-Octanol, **analysis**
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(sol-gel encapsulated **polydiacetylene** response to; sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)
IT **460-12-8D, Diacetylene**, derivs., polymers, sialic acid derivs.
RL: ARG (Analytical reagent use); BPR (Biological process); PRP (Properties); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)
(sol-gel matrixes and their prepn. for direct colorimetric **detection** of **analytes**)
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 7 OF 11 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:568970 HCAPLUS
DOCUMENT NUMBER: 129:200179
TITLE: Methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**
INVENTOR(S): Stevens, Raymond; Quan, Cheng
PATENT ASSIGNEE(S): The Regents of the University of California, USA
SOURCE: PCT Int. Appl., 121 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 11
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9836263	A1	19980820	WO 1998-US2777	19980213
W: AU, CA, JP				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9861627	A1	19980908	AU 1998-61627	19980213
EP 1007943	A1	20000614	EP 1998-906389	19980213
R: CH, DE, FR, GB, LI				

PRIORITY APPLN. INFO.: US 1997-38383 P 19970214
WO 1998-US2777 W 19980213

AB The present invention relates to methods and compns. for the direct detection of analytes using color changes that occur in biopolymeric material in response to selective binding of analytes. The invention provides biopolymeric materials comprising a plurality of polymd. self-assembling monomers and one or more protein ligands, wherein the biopolymeric materials change color in the presence of analyte. In some embodiments, the protein ligands are selected from the group consisting of peptides, proteins, antibodies, receptors, channels, and combinations thereof, although the present invention contemplates all protein ligands. In specific embodiments, the antibodies of the presently claimed invention

are directed against Chlamydia.

IC ICM G01N021-00
ICS G01N031-20; G01N033-544; G01N033-538; G01N033-53; G01N033-567; G01N033-537; G01N033-543; C12M001-00; C12N001-00; C12N001-20

CC 9-16 (Biochemical Methods)
Section cross-reference(s): 6, 10, 80

IT Polysiloxanes, **analysis**
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**
(anilines; methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT Films
Liposomes
(biopolymeric; methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT Protein receptors
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**
(cholera toxin, ganglioside GM1; methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT Molecular recognition
(complexes; methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT Amino acids, **analysis**
Sialic acids
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**
(**diacetylene** deriv.; methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT Diseases (animal)
(markers; methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT Amino group
Bacteria (Eubacteria)
Biosensors
Blood
Blood **analysis**
Bond
Buffers
Carboxyl group
Cell (biological)
Chelating agents
Chlamydia
Chromophores
Color
Color reaction
Colorimetry
Conformation (protein)
Coupling agents
Dopants
Drugs
Electron acceptors
Electron donors
Environmental pollution
Escherichia coli

Filters
Formyl group
Fungi
Hepatitis A virus
Hepatitis B virus
Human herpesvirus
Human herpesvirus 3
Human herpesvirus 4
Human immunodeficiency virus
Human poliovirus
Hydrophilicity
Hydrophobicity
Hydroxyl group
Immobilization (molecular)
Immunoassay
Influenza virus
Ions
Molecular topology
Mycobacterium tuberculosis
Neisseria gonorrhoeae
Onchocerca
Organic solvents
Parasite
Pathogen
Photopolymerization
Plasmodium (malarial genus)
Plasmodium falciparum
Protein immobilization
Rabies virus
Reoviridae
Rhinovirus
Rubella virus
Salmonella
Self-assembly
Self-association
Spectroscopy
Streptococcus
Sulfhydryl group
Surfactants
Toxoplasma gondii
Trypanosoma
Vaccinia virus
Variola virus
Vibrio vulnificus
Virus
(methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT DNA
Enzymes, **analysis**
Genetic elements
Hormones (animal), **analysis**
Lectins
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT Antibodies
Ligands
Proteins (general), **analysis**

RL: **ANT (Analyte)**; ARU (Analytical role, unclassified); BPR (Biological process); PRP (Properties); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process)
(methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT Volatile organic compounds
RL: **ANT (Analyte)**; ARU (Analytical role, unclassified); PRP (Properties); **ANST (Analytical study)**
(methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT Cholera toxin
RL: **ANT (Analyte)**; BSU (Biological study, unclassified); PRP (Properties); **ANST (Analytical study)**; BIOL (Biological study)
(methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT Alkenes, **analysis**
Alkynes
Allyl amines
Antigens
Carbohydrates, **analysis**
Cardiolipins
Ceramides
Cerebrosides
Fluoropolymers, **analysis**
Glass, **analysis**
Imides
Ion channel
Lysophosphatidylcholines
Mica-group minerals, **analysis**
Nucleic acids
Phosphatidic acids
Phosphatidylcholines, **analysis**
Phosphatidylethanolamines, **analysis**
Phosphatidylglycerols
Phosphatidylinositols
Phosphatidylserines
Polyoxyalkylenes, **analysis**
Sphingomyelins
Steroids, **analysis**
Trisaccharides
Urethanes
Vinyl ethers
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**
(methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT Biopolymers
Peptides, **analysis**
Receptors
RL: ARU (Analytical role, unclassified); BPR (Biological process); PRP (Properties); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process)
(methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT Escherichia enterotoxins
RL: ARU (Analytical role, unclassified); BSU (Biological study,

unclassified); **ANST (Analytical study)**; BIOL (Biological study)
(methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT Membranes (nonbiological)
(monolayer; methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT Glycerophospholipids
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**
(phosphatidylmethanol; methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT Lipids, **analysis**
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**
(polymd.; methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT Polymerization
(polymerizable groups; methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT Polymers, **analysis**
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**
(polythiophenes; methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT Oligosaccharides, **analysis**
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**
(tetrasaccharides; methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT Detergents
(zwitterionic; methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT 7440-21-3, Silicon, **analysis**
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**
(chips; methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT 50-70-4, D-Glucitol, **analysis** 56-23-5, Carbon tetrachloride, **analysis** 57-50-1, Sucrose, **analysis** 59-23-4, Galactose, **analysis** 60-29-7, Diethylether, **analysis** 67-66-3, **analysis** 71-36-3, 1-Butanol, **analysis** 71-43-2, Benzene, **analysis** 75-09-2, **analysis** 108-88-3, **analysis** 110-54-3, Hexane, **analysis** 110-82-7, Cyclohexane, **analysis** 111-27-3, 1-Hexanol, **analysis**
RL: **ANT (Analyte)**; ARU (Analytical role, unclassified); PRP (Properties); **ANST (Analytical study)**
(methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT 56-40-6D, Glycine, **diacetylene** derivs. 56-85-9D, L-Glutamine, **diacetylene** derivs. 56-86-0D, L-Glutamic acid, **diacetylene** derivs. 56-89-3D, Cystine, **diacetylene** derivs. 57-88-5, Cholesterol, **analysis** 62-53-3D, Benzenamine, siloxane derivs. 63-42-3D, Lactose, **diacetylene** derivs. 63-91-2D, L-Phenylalanine, **diacetylene** derivs.

71-00-1D, L-Histidine, **diacetylene** derivs. 73-32-5D, L-Isoleucine, **diacetylene** derivs. 79-06-1D, 2-Propenamide, derivs. 83-44-3 109-97-7D, Pyrrole, derivs. 110-02-1D, Thiophene, derivs. 111-87-5, 1-Octanol, **analysis** 123-78-4, D-Erythro-Sphingosine 151-21-3, **analysis** **460-12-8D**, **Diacetylene**, derivs. 583-93-7D, 2,6-Diaminopimelic acid, **diacetylene** derivs. 1121-34-2, Malic anhydride 4067-16-7D, Pentaethylenehexamine, **diacetylene** derivs. 7440-57-5, Gold, **analysis** 7631-86-9, Silica, **analysis** 9002-84-0, Teflon 9002-88-4 9003-53-6, Polystyrene 9012-36-6, Sepharose 9014-76-0, Sephadex 9036-19-5, Octoxynol 18358-13-9D, Methacrylate, derivs., **analysis** 19295-34-2, Vinylpyridinium 25014-41-9, Polyacrylonitrile 25322-68-3 29557-51-5, Dodecylphosphocholine 37758-47-7, Ganglioside GM1 58846-77-8, Decylglucoside 59247-13-1, Ganglioside GT1b 60676-86-0, Silica, vitreous 66990-32-7, 10,12-Pentacosadiynoic acid 120650-77-3 137870-33-8 138305-24-5, 5,7-Pentacosadiynoic acid 144314-93-2 146064-05-3 146064-07-5 155020-22-7 162635-75-8 178560-65-1, 5,7-Docosadiynoic acid 211996-58-6
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**
(methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT 9001-51-8, Hexokinase
RL: ARU (Analytical role, unclassified); PRP (Properties); **ANST (Analytical study)**
(methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT **27987-87-7, Polydiacetylene**
RL: ARU (Analytical role, unclassified); PRP (Properties); RCT (Reactant); **ANST (Analytical study)**
(methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT 92266-90-5P, 10,12-Pentacosadiyn-1-ol
RL: ARU (Analytical role, unclassified); RCT (Reactant); SPN (Synthetic preparation); **ANST (Analytical study)**; PREP (Preparation)
(methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT 144224-70-4DP, **polydiacetylene** derivs. 194152-41-5P 194152-42-6P 194152-43-7P 194152-44-8P 211996-57-5P
RL: ARU (Analytical role, unclassified); SPN (Synthetic preparation); **ANST (Analytical study)**; PREP (Preparation)
(methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT 50-99-7, D-Glucose, biological studies
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT 10108-64-2, Cadmium dichloride
RL: MSC (Miscellaneous); PRP (Properties)
(methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT 100-58-3 107-15-3, 1,2-Ethanediamine, reactions 141-43-5, reactions 929-75-9, Tetraethylene glycol diamine 3282-30-2,

Trimethylacetylchloride 6066-82-6, N-Hydroxy succinimide 63488-10-8 81357-07-5 136766-23-9 194152-37-9
RL: RCT (Reactant)
(methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT 929-75-9DP, Tetraethylene glycol diamine, **polydiacetylene** derivs. 6066-82-6DP, N-Hydroxy succinimide, **polydiacetylene** derivs. 94598-32-0P 136766-21-7P 146064-08-6P 146064-09-7P 194152-38-0P 194152-39-1P 194152-40-4P 211996-51-9DP, **polydiacetylene** derivs. 211996-59-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT 107-15-3DP, 1,2-Ethanediamine, **polydiacetylene** derivs. 141-43-5DP, **polydiacetylene** derivs.
RL: SPN (Synthetic preparation); PREP (Preparation)
(methods and compns. for **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

L26 ANSWER 8 OF 11 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:468472 HCAPLUS
DOCUMENT NUMBER: 129:213804
TITLE: **Diacetylene** Chelator Lipids as **Support** for Immobilization and Imaging of Proteins by Atomic Force Microscopy
AUTHOR(S): Dorn, Ingmar T.; Hofmann, Ulrich G.; Peltonen, Jouko; Tampe, Robert
CORPORATE SOURCE: Lehrstuhl fuer Biophysik E22, Technische Universitaet Muenchen, Garching, D-85747, Germany
SOURCE: Langmuir (1998), 14(17), 4836-4842
CODEN: LANGD5; ISSN: 0743-7463
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Chelator lipids represent a powerful and flexible tool to immobilize, orient, and crystallize histidine-tagged proteins at interfaces. To produce stable two-dimensional polymers that are biofunctional, we synthesized diacetylene lipids carrying a metal-chelating headgroup. These lipids were characterized at the air-water interface with respect to their thermodn. properties, complex formation, and photopolymn. using film balance techniques combined with epic-fluorescence microscopy. Polymd. monolayers were transferred onto solid supports and reversible binding of histidine-tagged protein/DNA complexes was followed by at. force microscopy. The versatility of the chelator lipid concept may open the possibility to examine structure and function of proteins or multiprotein assemblies under native conditions and in real time by scanning probe microscopy.

CC 9-16 (Biochemical Methods)
Section cross-reference(s): 6

ST **diacetylene** chelator lipid **support** immobilization protein; atomic force microscopy protein chelator lipid

IT Heat-shock factors
RL: PRP (Properties)
(HSF24/DNA complex; **diacetylene** chelator lipids as **support** for immobilization and imaging of proteins by at. force microscopy)

IT DNA complexes

RL: PRP (Properties)
(HSF24/DNA; **diacetylene** chelator lipids as **support** for immobilization and imaging of proteins by at. force microscopy)

IT Atomic force microscopy
Chelating agents
Fluorescence microscopy
Immobilization (molecular)
Scanning probe microscopy
(**diacetylene** chelator lipids as **support** for immobilization and imaging of proteins by at. force microscopy)

IT Lipids, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**diacetylene** chelator lipids as **support** for immobilization and imaging of proteins by at. force microscopy)

IT 112-04-9, Silane, trichlorooctadecyl-
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**diacetylene** chelator lipids as **support** for immobilization and imaging of proteins by at. force microscopy)

IT 7440-21-3, Silicon, uses
RL: DEV (Device component use); USES (Uses)
(**diacetylene** chelator lipids as **support** for immobilization and imaging of proteins by at. force microscopy)

IT 7718-54-9, Nickel chloride, uses 212561-90-5
RL: NUU (Other use, unclassified); USES (Uses)
(**diacetylene** chelator lipids as **support** for immobilization and imaging of proteins by at. force microscopy)

IT 108-30-5, reactions 111-42-2, Diethanolamine, reactions 538-75-0, Dicyclohexylcarbodiimide 6066-82-6, N-Hydroxysuccinimide 24424-99-5, Di-tert-butyl-dicarbonate 66990-32-7, 10,12-Pentacosadiynoic acid 205379-08-4
RL: RCT (Reactant)
(**diacetylene** chelator lipids as **support** for immobilization and imaging of proteins by at. force microscopy)

IT 103898-11-9P 212561-84-7P 212561-85-8P 212561-86-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(**diacetylene** chelator lipids as **support** for immobilization and imaging of proteins by at. force microscopy)

IT 212561-87-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(**diacetylene** chelator lipids as **support** for immobilization and imaging of proteins by at. force microscopy)

L26 ANSWER 9 OF 11 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1997:517575 HCAPLUS
DOCUMENT NUMBER: 127:173472
TITLE: Polymeric film, assay and method for direct colorimetric **detection** of **analytes**
INVENTOR(S): Charych, Deborah; Nagy, John
PATENT ASSIGNEE(S): Regents of the University of California, USA; Charych, Deborah; Nagy, John
SOURCE: PCT Int. Appl., 54 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 11
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9727316	A1	19970731	WO 1997-US1291	19970124

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

US 6001556	A	19991214	US 1996-592724	19960126
CA 2244098	AA	19970731	CA 1997-2244098	19970124
AU 9718422	A1	19970820	AU 1997-18422	19970124
AU 715973	B2	20000210		
EP 883690	A1	19981216	EP 1997-904003	19970124
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
BR 9707207	A	19990720	BR 1997-7207	19970124
JP 2000506378	T2	20000530	JP 1997-527078	19970124

PRIORITY APPLN. INFO.:	US 1996-592724	A	19960126
	US 1992-976697	B2	19921113
	US 1992-982189	B2	19921125
	US 1993-159927	B1	19931130
	WO 1997-US1291	W	19970124

AB A polymd. film, assay and method for direct detection of analytes using observable spectral changes in monomol. films which occur upon the analytes selective binding to the film.

IC ICM C12Q001-00
ICS G01N033-53; G01N033-92; G01N021-03

CC 9-1 (Biochemical Methods)
Section cross-reference(s): 64

IT 46755-94-6, (-)-1,1-Diphenyl-1,2-propanediol 142738-70-3
RL: NUU (Other use, unclassified); USES (Uses)
(synthesis of lipid **diacetylene** analogs of di-Ph propanediol as polymd. bilayer film for direct colorimetric **detection** of **analytes**)

IT 194152-37-9
RL: RCT (Reactant)
(synthesis of lipid **diacetylene** analogs of di-Ph propanediol as polymd. bilayer film for direct colorimetric **detection** of **analytes**)

IT 194152-38-0P 194152-39-1P 194152-40-4P 194152-41-5P 194152-42-6P 194152-43-7P 194152-44-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(synthesis of lipid **diacetylene** analogs of di-Ph propanediol as polymd. bilayer film for direct colorimetric **detection** of **analytes**)

L26 ANSWER 10 OF 11 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1995:452191 HCAPLUS
DOCUMENT NUMBER: 122:209222
TITLE: **Fluorescent** lipid polymer-macromolecular ligand compositions as detection element in ligand **assays**
INVENTOR(S): Saul, Tom; Der-Balian, Georges; Kenney, Paul; Mathis, Heidi; Johnson, Shirley; Ribi, Hans; Witty, Tom
PATENT ASSIGNEE(S): Biocircuits Corp., USA
SOURCE: PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9502183	A1	19950119	WO 1994-US7636	19940707
W: CA, JP				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5415999	A	19950516	US 1993-89975	19930709
CA 2141936	AA	19950119	CA 1994-2141936	19940707
EP 660931	A1	19950705	EP 1994-921490	19940707
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
JP 08501883	T2	19960227	JP 1994-504162	19940707
US 5618735	A	19970408	US 1995-405549	19950316

PRIORITY APPLN. INFO.: US 1993-89975 19930709
WO 1994-US7636 19940707

AB Methods and compns. are provided for the detection of analytes. The method employs a fluorescence prodn. layer which comprises a fluorescent polymd. polyunsatd. lipid layer in assocn. with a ligand which is a member of a specific binding pair, where the ligand is competitive with the analyte for the complementary binding member or is a complementary binding member. By providing for a fluorescence modulation reagent which binds to the fluorescence prodn. layer in proportion to the amt. of analyte in the sample, by measuring the resulting fluorescence after carrying out the assay methodol., the amt. of analyte can be detd. quant. An example is given of the detn. of T4 in blood plasma by using a T4-bovine serum albumin conjugate, anti-T4-alk. phosphatase conjugate, and a polymd. polyunsatd. lipid layer prepd. from N-(2',3'-dihydroxy)propyl-3-pentaeicosan-10,12-diynamide.

IC ICM G01N033-53
ICS G01N021-01

CC 9-5 (Biochemical Methods)
Section cross-reference(s): 2

ST ligand **assay fluorescent** lipid polymer biopolymer; **immunoassay fluorescent** lipid biopolymer conjugate; plasma thyroxine detn **fluorescence immunoassay** sensor

IT Sensors
(**fluorescent** lipid polymer macromol. ligand compns. as detection elements in ligand **assays**)

IT Blood analysis
Immunoassay
Polymer-supported reagents
(**fluorescent** lipid polymer-macromol. ligand compns. as detection elements in ligand **assays**)

IT Antigens
Biopolymers
Enzymes
Haptens
Macromolecular compounds
Proteins, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(**fluorescent** lipid polymer-macromol. ligand compns. as detection elements in ligand **assays**)

IT Plastics
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(**fluorescent** lipid polymer-macromol. ligand compns. as detection elements in ligand **assays**)

IT Immunoglobulins
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(G, conjugates, **fluorescent** lipid polymer-macromol. ligand

compns. as detection elements in ligand **assays**)
IT Albumins, preparation
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(conjugates, with thyroxine; **fluorescent** lipid polymer-macromol. ligand compns. as detection elements in ligand **assays**)
IT Spectrochemical analysis
(fluorometric, **fluorescent** lipid polymer macromol. ligand compns. as detection elements in ligand **assays**)
IT 51-48-9, L-Thyroxine, analysis
RL: ANT (Analyte); RCT (Reactant); ANST (Analytical study)
(**fluorescent** lipid polymer-macromol. ligand compns. as detection elements in ligand **assays**)
IT 9001-78-9DP, antibody conjugates
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(**fluorescent** lipid polymer-macromol. ligand compns. as detection elements in ligand **assays**)
IT 79-41-4, analysis **27987-87-7, Polydiacetylene**
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(**fluorescent** lipid polymer-macromol. ligand compns. as detection elements in ligand **assays**)
IT 161865-61-8P
RL: ARU (Analytical role, unclassified); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation)
(**fluorescent** lipid polymer-macromol. ligand compns. as detection elements in ligand **assays**)
IT 110-99-6, Diglycolic acid
RL: RCT (Reactant)
(**fluorescent** lipid polymer-macromol. ligand compns. as detection elements in ligand **assays**)
IT 32180-11-3P, L-Thyroxine methyl ester 64486-49-3P 161865-59-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(**fluorescent** lipid polymer-macromol. ligand compns. as detection elements in ligand **assays**)

L26 ANSWER 11 OF 11 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1994:192705 HCAPLUS
DOCUMENT NUMBER: 120:192705
TITLE: Surface effects on **polydiacetylene** conformations in solution by EWIFS
AUTHOR(S): Phillips, David; Rumbles, Garry; Brown, Alan J.
CORPORATE SOURCE: Dep. Chem., Imp. Coll., London, SW7 2AZ, UK
SOURCE: Polym. Prepr. (Am. Chem. Soc., Div. Polym. Chem.) (1992), 33(1), 845
CODEN: ACPPAY; ISSN: 0032-3934
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Evanescent wave-induced fluorescence spectroscopy (EWIFS) was used to study the mol. influence on the quality of polydiacetylene (poly-4BCMU) thin films used for optical waveguides. The emphasis was placed on the interfacial region between the polymer and the silica substrate.
CC 36-2 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 37, 38, 73
ST **polydiacetylene** conformation silica surface **fluorescence** ; optical waveguide **polydiacetylene** conformation **fluorescence**
IT Chains, chemical
(conformation of, of **polydiacetylene** on silica surfaces,

fluorescence study of, use for optical waveguides in relation to)

IT **Fluorescence**
(evanescent wave-induced, of **polydiacetylene** on silica surfaces, vol. conformation in relation to)

IT Interface
(**polydiacetylene**-silica, mol. orientation at, **fluorescence** study of)

IT Waveguides
(optical, polydiacetyolene thin films for, mol. conformational effects in, **fluorescence** study of)

IT Polyacetylenes, properties
RL: PRP (Properties)
(**polydiacetylenes**, conformation of, on silica **substrate**, evanescent wave-induced **fluorescence** spectroscopic study of, use for optical waveguides in relation to)

IT 7631-86-9, Silica, properties
RL: PRP (Properties)
(conformation of **polydiacetylene** on surfaces of, **fluorescence** study of, use for optical waveguides in relation to)

IT 68777-93-5, 4BCMU homopolymer 76135-61-0, 4BCMU homopolymer, SRU
RL: PRP (Properties)
(conformation of, on silica **substrate**, evanescent wave-induced **fluorescence** spectroscopic study of, use for optical waveguides in relation to)

L27 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:549159 HCAPLUS
DOCUMENT NUMBER: 136:107378
TITLE: A new colorimetric **assay** for studying and rapid screening of membrane penetration enhancers
AUTHOR(S): Evrard, Damien; Touitou, Elka; Kolusheva, Sofiya; Fishov, Yitzhak; Jelinek, Raz
CORPORATE SOURCE: Department of Chemistry and Stadler Minerva Center for Mesoscale Macromolecular Engineering, Ben Gurion University of the Negev, Beersheva, 84105, Israel
SOURCE: Pharmaceutical Research (2001), 18(7), 943-949
CODEN: PHREEB; ISSN: 0724-8741
PUBLISHER: Kluwer Academic/Plenum Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English

AB This work aims to demonstrate a novel chem. assay for rapid screening and anal. of the mode of action of membrane interaction by penetration enhancers. The new bio-mimetic membrane assembly, consisting of supramol. aggregates of lipids and conjugated polydiacetylene, undergoes visible and quantifiable blue-red color transitions upon interaction with penetration enhancers. The new colorimetric model has been employed to examine various classes of penetration enhancers, including Azone, oleic acid, propylene glycol, menthol, Transcutol, Tween-20, and Diazepam. The assay enables to evaluate the validity of various observations and hypotheses proposed in previous studies regarding permeation enhancement activities. Our results suggest, for example, that propylene glycol (PG) by itself does not interfere with membranes, but rather exhibits synergistic effect in combination with other penetration enhancers. Similarly, our data demonstrate that Transcutol does not independently interact with membranes. The colorimetric system also indicates that interaction of

penetration enhancers with membranes depend upon the lipid phase, as well as the self-assembly properties of the enhancer mols. The new biomimetic model membrane system can be applied for rapid screening of the activities of penetration enhancers, and provides insight into the mechanisms of permeability of membrane-active compds.

CC 63-5 (Pharmaceuticals)

ST colorimetric **assay** membrane penetration enhancer

IT Colorimetry
Membrane, biological
Permeation enhancers
Self-association
Supramolecular structure
(new colorimetric **assay** for studying and rapid screening of membrane penetration enhancers)

IT Ceramides
Lipids, biological studies
Polydiacetylenes
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(new colorimetric **assay** for studying and rapid screening of membrane penetration enhancers)

IT Biological transport
(permeation; new colorimetric **assay** for studying and rapid screening of membrane penetration enhancers)

IT 57-55-6, Propylene-glycol, properties 112-80-1, Oleic acid, properties 59227-89-3, Azone
RL: PRP (Properties)
(new colorimetric **assay** for studying and rapid screening of membrane penetration enhancers)

IT 2644-64-6P, Dipalmitoylphosphatidylcholine 18656-38-7P, DMPC
RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(new colorimetric **assay** for studying and rapid screening of membrane penetration enhancers)

IT 75-89-8 111-90-0, Transcutol 439-14-5, Diazepam 1490-04-6, Menthol 9005-64-5, Tween-20 **27987-87-7, Polydiacetylene**
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(new colorimetric **assay** for studying and rapid screening of membrane penetration enhancers)

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:91409 HCAPLUS
DOCUMENT NUMBER: 134:144212
TITLE: Doped colorimetric **assay** liposomes
INVENTOR(S): Charych, Deborah; Stevens, Raymond C.
PATENT ASSIGNEE(S): The Reagents of the University of California, USA
SOURCE: U.S., 23 pp., Cont.-in-part of U.S. Ser. No. 389,475, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 11
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6183772	B1	20010206	US 1996-609312	19960301

CA 2211972	AA	19960822	CA 1996-2211972	19960213
US 6306598	B1	20011023	US 1999-337973	19990621
US 2001026915	A1	20011004	US 2000-734410	20001211

PRIORITY APPLN. INFO.:

US 1995-389475	B2	19950213
US 1992-976697	A2	19921113
US 1993-159927	A2	19931130
US 1994-289384	B2	19940811
US 1994-328237	B2	19941024
US 1996-592724	A3	19960126
US 1996-609312	A2	19960301
US 1997-38383	P	19970214
US 1997-39749	P	19970303
US 1997-50496	P	19970623
US 1997-920501	A3	19970829
US 1997-944323	A2	19971006
US 1998-23898	A2	19980213
US 1998-33557	A2	19980302
US 1998-90266	P	19980622
US 1998-103344	A2	19980623
US 1999-337973	A2	19990621
US 1999-170190	P	19991210
US 1999-461509	A2	19991214
US 2000-500295	A2	20000208

AB The present invention provides compns. comprising colorimetric assay liposomes. The present invention also provides methods for producing colorimetric liposomes and colorimetric liposome assay systems. In preferred embodiments, these colorimetric liposome systems provide high levels of sensitivity through the use of dopant mols. As these dopants allow the controlled destabilization of the liposome structure, upon exposure of the doped liposomes to analyte(s) of interest, the indicator color change is facilitated and more easily recognized. Thin film assemblies and liposomes were constructed for detection of cholera toxin and influenza virus. Sialic acid- or lactose-derivatized PDA, and PDA were used. The cholera toxin biosensor also had GM1 ganglioside. UV spectra were recorded.

IC ICM A61K009-127
ICS A61K049-00; G01N033-53; G01N033-544

NCL 424450000

CC 9-5 (Biochemical Methods)
Section cross-reference(s): 4

ST doped colorimetric liposome **assay**; cholera toxin biosensor; influenza virus sialic acid PDA liposome

IT Cell adhesion molecules
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(ICAM-1 (intercellular adhesion mol. 1), as ligands in liposomes; doped colorimetric **assay** liposomes)

IT Phosphatidylethanolamines, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(N-biotinylated, as dopant; doped colorimetric **assay** liposomes)

IT Receptors
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(PVR (poliovirus receptor), as ligands in liposomes; doped colorimetric **assay** liposomes)

IT Alkynes
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(alkadiynes, polymd., in liposomes; doped colorimetric **assay** liposomes)

IT Buffers

Culture media
Physiological saline solutions
(as aq. soln. in liposome prepn.; doped colorimetric **assay** liposomes)

IT Phosphatidic acids
Polyoxyalkylenes, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(as dopant; doped colorimetric **assay** liposomes)

IT Surfactants
(as dopants; doped colorimetric **assay** liposomes)

IT Cardiolipins
Ceramides
Cerebrosides
Lipids, uses
Lysophosphatidylcholines
Phosphatidic acids
Phosphatidylcholines, uses
Phosphatidylethanolamines, uses
Phosphatidylglycerols
Phosphatidylinositols
Phosphatidylserines
Sphingomyelins
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(as dopants; doped colorimetric **assay** liposomes)

IT Cholinergic receptors
Complement receptors
Trisaccharides
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(as ligands in liposomes; doped colorimetric **assay** liposomes)

IT Toxins
RL: ANT (Analyte); ANST (Analytical study)
(cholera; doped colorimetric **assay** liposomes)

IT Peptides, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(detergents; as dopants; doped colorimetric **assay** liposomes)

IT Biosensors
Colorimetry
Dopants
Langmuir-Blodgett films
Liposomes
Spectrophotometry
(doped colorimetric **assay** liposomes)

IT Toxins
RL: ANT (Analyte); ANST (Analytical study)
(doped colorimetric **assay** liposomes)

IT Receptors
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(for polio virus, as ligands in liposomes; doped colorimetric **assay** liposomes)

IT Filtration
Solutions
(in liposome prepn.; doped colorimetric **assay** liposomes)

IT Ligands
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(in liposomes; doped colorimetric **assay** liposomes)

IT Polymerization
(of diyne monomers in liposome prepn.; doped colorimetric **assay** liposomes)

IT Affinity
(of ligands for analyte; doped colorimetric **assay** liposomes)

IT Solvents
(org., in liposome prepn.; doped colorimetric **assay** liposomes)
IT Detergents
(peptides, as dopants; doped colorimetric **assay** liposomes)
IT Physiological saline solutions
(phosphate-buffered, as aq. soln. in liposome prepn.; doped colorimetric **assay** liposomes)
IT Sialic acids
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(reaction products with **diacetylene**, as dopants; doped colorimetric **assay** liposomes)
IT Influenza virus
(sialic acid-derivatized **diacetylene** liposomes for detection of; doped colorimetric **assay** liposomes)
IT Glass, uses
RL: DEV (Device component use); USES (Uses)
(slides, in cholera toxin biosensor; doped colorimetric **assay** liposomes)
IT Oligosaccharides, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(tetrasaccharides, as ligands in liposomes; doped colorimetric **assay** liposomes)
IT Detergents
(zwitterionic, as dopants; doped colorimetric **assay** liposomes)
IT Adrenoceptors
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(.beta.-, as ligands in liposomes; doped colorimetric **assay** liposomes)
IT 77-86-1, Trizma 1132-61-2, 3-[N-Morpholino]propanesulfonic acid 7365-45-9, N-[2-Hydroxyethyl]piperazine-N'-[2-ethanesulfonic acid]
RL: NUU (Other use, unclassified); USES (Uses)
(as aq. soln. in liposome prepn.; doped colorimetric **assay** liposomes)
IT 57-88-5, Cholesterol, uses 83-44-3 123-78-4, D-Erythro-Sphingosine 151-21-3, Sodium dodecyl sulfate, uses 9005-63-4 9036-19-5, Octoxynol 25322-68-3, Polyethylene glycol 29557-51-5, Dodecyl phosphocholine 58846-77-8, Decylglucoside 75621-03-3, 3-[3-(Cholamidopropyl)dimethylammonio]-1-propanesulfonate
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(as dopant; doped colorimetric **assay** liposomes)
IT 63-42-3D, Lactose, reaction products with **diacetylene** **460-12-8D, Diacetylene**, derivs.
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(as dopants; doped colorimetric **assay** liposomes)
IT 37758-47-7, Ganglioside GM1 59247-13-1, Ganglioside GT1b 62229-50-9, Epidermal growth factor
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(as ligand in liposomes; doped colorimetric **assay** liposomes)
IT 56-23-5, Carbon tetrachloride, uses 64-17-5, Ethanol, uses 67-56-1, Methanol, uses 67-66-3, Chloroform, uses 71-43-2, Benzene, uses 75-05-8, Acetonitrile, uses 75-09-2, Methylene chloride, uses 110-54-3, Hexane, uses 110-82-7, Cyclohexane, uses
RL: NUU (Other use, unclassified); USES (Uses)
(as org. solvent in liposome prepn.; doped colorimetric **assay** liposomes)
IT 50930-22-8
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)

(as virus binding inhibitor; doped colorimetric **assay** liposomes)

IT 324011-54-3 324011-55-4
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(doped colorimetric **assay** liposomes)

IT 112-04-9, Octadecyltrichlorosilane
RL: DEV (Device component use); USES (Uses)
(glass slides coated with, in cholera toxin biosensor; doped colorimetric **assay** liposomes)

IT 7782-44-7, Oxygen, processes
RL: REM (Removal or disposal); PROC (Process)
(in liposome prepn.; doped colorimetric **assay** liposomes)

IT 66990-32-7, 10,12-Pentacosadiynoic acid 146064-05-3
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(in liposomes and thin film assemblies for detection of influenza virus and cholera toxin; doped colorimetric **assay** liposomes)

IT 174683-52-4
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(in thin film assemblies for detection of cholera toxin; doped colorimetric **assay** liposomes)

REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:842440 HCAPLUS
DOCUMENT NUMBER: 134:128054
TITLE: Peptide-Membrane Interactions Studied by a New Phospholipid/**Polydiacetylene** Colorimetric Vesicle **Assay**
AUTHOR(S): Kolusheva, Sofiya; Shahal, Tamar; Jelinek, Raz
CORPORATE SOURCE: Department of Chemistry and Stadler Minerva Center for Mesoscopic Macromolecular Engineering, Ben Gurion University of the Negev, Beersheva, 84105, Israel
SOURCE: Biochemistry (2000), 39(51), 15851-15859
CODEN: BICHAW; ISSN: 0006-2960
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Interactions between peptides and lipid membranes play major roles in numerous physiol. processes, such as signaling, cytolysis, formation of ion channels, and cellular recognition. We describe a new colorimetric technique for studying peptide-membrane interactions. The new assay is based on supramol. assemblies composed of phospholipids embedded in a matrix of polydiacetylene (PDA) mols. The phospholipid/PDA vesicle solns. undergo visible color changes upon binding of membrane peptides. Expts. utilizing various anal. techniques confirm that the blue-to-red color transitions of the phospholipid/PDA vesicles are directly related to adoption of helical conformations by the peptides and their assocn. with the lipids. Spectroscopic data indicate that the colorimetric transitions are correlated with important mol. parameters, such as the degree of penetration of the peptides into lipid bilayers, and the mechanisms of peptide-lipid binding. The results suggest that the new colorimetric assay could be utilized for studying interactions and organization of membrane peptides.

CC 9-5 (Biochemical Methods)
Section cross-reference(s): 6

ST peptide protein interaction membrane **polydiacetylene** colorimetry conformation

IT Cholinergic receptors
RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(M2 domain of .delta. subunit; peptide-membrane interactions studied by a new phospholipid/**polydiacetylene** colorimetric vesicle **assay**)

IT Proteins, specific or class
RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(membrane; peptide-membrane interactions studied by a new phospholipid/**polydiacetylene** colorimetric vesicle **assay**)

IT Colorimetry
Membrane, biological
Micelles
Spectroscopy
Supramolecular structure
(peptide-membrane interactions studied by a new phospholipid/**polydiacetylene** colorimetric vesicle **assay**)

IT Peptides, analysis
RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(peptide-membrane interactions studied by a new phospholipid/**polydiacetylene** colorimetric vesicle **assay**)

IT Phospholipids, analysis
Polydiacetylenes
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(peptide-membrane interactions studied by a new phospholipid/**polydiacetylene** colorimetric vesicle **assay**)

IT Conformation
(protein; peptide-membrane interactions studied by a new phospholipid/**polydiacetylene** colorimetric vesicle **assay**)

IT 108433-95-0, Magainin II 118904-13-5 123168-46-7 133294-60-7 186316-60-9 321909-07-3 321909-08-4
RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(peptide-membrane interactions studied by a new phospholipid/**polydiacetylene** colorimetric vesicle **assay**)

IT 18194-24-6, DMPC 66990-31-6
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(peptide-membrane interactions studied by a new phospholipid/**polydiacetylene** colorimetric vesicle **assay**)

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:568447 HCAPLUS
DOCUMENT NUMBER: 133:161564
TITLE: Polymeric liposome assemblies containing polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins
INVENTOR(S): Charych, Deborah
PATENT ASSIGNEE(S): The Regents of the University of California, USA

SOURCE: U.S., 23 pp., Cont.-in-part of U.S. Ser. No. 389,475, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 11
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6103217	A	20000815	US 1997-901220	19970728
US 6080423	A	20000627	US 1997-944257	19971006

PRIORITY APPLN. INFO.: US 1994-289384 A2 19940811
US 1994-328237 B2 19941024
US 1995-389475 B2 19950213
US 1996-22942 P 19960729

AB The presently claimed invention relates to polymeric assemblies which visibly change color in the presence of analyte. In particular, the presently claimed invention relates to liposomes comprising a plurality of lipid monomers, which comprises a polymerizable group, a hydrophilic head group and a hydrophobic tail group, and one or more ligands. Overall carbon chain length, and polymerizable group positioning on the monomer influence color change sensitivity to analyte concns.

IC ICM A61B049-00
ICS A01N025-26; G01N033-545; G01N021-29
NCL 424009321
CC 9-1 (Biochemical Methods)
ST polymeric assembly liposome **polydiacetylene** colorimetry toxin

IT Toxins
RL: ANT (Analyte); ANST (Analytical study)
(cholera; polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Toxins
RL: ANT (Analyte); ANST (Analytical study)
(enterotoxins; polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Solvents
(org.; polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Toxins
RL: ANT (Analyte); ANST (Analytical study)
(pertussis; polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Polymerization
(photopolymn.; polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Bacteria (Eubacteria)
Buffers
Colorimetry
Drugs
Fungi
Influenza virus
Langmuir-Blodgett films
Liposomes
Molecular recognition
Optical properties
Virus
(polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Enzymes, analysis

Receptors
Toxins
RL: ANT (Analyte); ANST (Analytical study)
(polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Glycolipids
Glycoproteins, general, analysis
RL: ANT (Analyte); BOC (Biological occurrence); ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence)
(polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Agglutinins and Lectins
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Ligands
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Lipids, reactions
RL: DEV (Device component use); RCT (Reactant); USES (Uses)
(polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Sialic acids
RL: DEV (Device component use); RCT (Reactant); USES (Uses)
(polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Polydiacetylenes
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Toxins
RL: ANT (Analyte); ANST (Analytical study)
(toxin A; polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT 104443-62-1
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT 7333-25-7, 10,12-Octadecadiynoic acid 66990-30-5, 10,12-Tricosadiynoic acid 66990-32-7, 10,12-Pentacosadiynoic acid 178560-65-1, 5,7-Docosadiynoic acid 182047-75-2, 5,7-Tetracosadiynoic acid
RL: DEV (Device component use); RCT (Reactant); USES (Uses)
(polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:425676 HCAPLUS
DOCUMENT NUMBER: 131:41778
TITLE: Colorimetric sensor employing **polydiacetylene** membrane
INVENTOR(S): Jo, Yoshio; Inoue, Toshiki; Takada, Kouichi
PATENT ASSIGNEE(S): Hogy Medical Co., Ltd., Japan
SOURCE: Eur. Pat. Appl., 11 pp.

CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 926497	A2	19990630	EP 1998-310595	19981222
EP 926497	A3	20000614		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 11194130	A2	19990721	JP 1997-369574	19971226
JP 3138442	B2	20010226		
US 6277652	B1	20010821	US 1998-220389	19981223

PRIORITY APPLN. INFO.: JP 1997-369574 A 19971226

AB Disclosed is a colorimetric sensor comprising polydiacetylene membrane liposomes, a polydiacetylene membrane film or fine particles coated with a polydiacetylene membrane, in which the polydiacetylene membrane is incorporated with a protein having a reduced mol. wt. low enough not to cause color change in the polydiacetylene membrane. The examples of the reduced-mol.-wt. proteins include an antibody Fab' fragment, an antigenic protein of mol. wt. of 100,000 or less, and a peptide consisting of 3-20 amino acid residue, which undergo an antigen-antibody reaction with an antigen or antibody contained in a sample. As the reduced-mol.-wt. protein is also employed a combination of single-stranded DNA of 100 bases or less which hybridizes with single-stranded DNA contained in a sample to form a double-stranded DNA, and an antibody which reacts with said double-stranded DNA but does not react with the single-stranded DNA contained in the sample. A method for anal. of biosample is also disclosed, which comprises contacting the colorimetric sensor with a soln. sample and utilizing an absorption measurement or a visual observation with the naked eye to detect color change in the polydiacetylene membrane.

IC ICM G01N033-545
ICS G01N033-546; G01N033-563; C12Q001-68
CC 9-1 (Biochemical Methods)
ST colorimetric sensor **polydiacetylene** membrane
IT Colorimetry
Films
Immunoassay
Liposomes
Membranes, nonbiological
Nucleic acid hybridization
Particles
Sensors
(colorimetric sensor employing **polydiacetylene** membrane)
IT Amino acids, uses
Antibodies
Antigens
Peptides, uses
Proteins, general, uses
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(colorimetric sensor employing **polydiacetylene** membrane)
IT Polydiacetylenes
RL: DEV (Device component use); USES (Uses)
(colorimetric sensor employing **polydiacetylene** membrane)
IT Biosensors
(immunosensors; colorimetric sensor employing **polydiacetylene** membrane)

IT DNA
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(single-stranded; colorimetric sensor employing **polydiacetylene** membrane)

L27 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:384965 HCAPLUS
DOCUMENT NUMBER: 131:184021
TITLE: Synthesis of Deuterated Volatile Lipid Degradation Products To Be Used as Internal Standards in Isotope Dilution **Assays**. 1. Aldehydes
AUTHOR(S): Lin, Jianming; Welti, Dieter H.; Vera, Francia Arce; Fay, Laurent B.; Blank, Imre
CORPORATE SOURCE: Nestle Research Center, Nestec Ltd., Lausanne, CH-1000, Switz.
SOURCE: J. Agric. Food Chem. (1999), 47(7), 2813-2821
CODEN: JAFCAU; ISSN: 0021-8561
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The isotopically labeled compds. [5,6-2H2]hexanal (d-I), [2,3-2H2]-(E)-2-nonenal (d-II), [3,4-2H2]-(E,E)-2,4-nonadienal (d-III), and [3,4-2H2]-(E,E)-2,4-decadienal (d-IV) were prepd. in good yields using new or improved synthesis procedures. Labeling position, chem. purity, and isotopic distribution of the compds. were characterized by various MS and NMR techniques. These mols. are used as internal stds. in quantification expts. based on isotope diln. assay. Synthesis of d-I, d-III, and d-IV has not yet been reported in the literature.
CC 17-1 (Food and Feed Chemistry)
Section cross-reference(s): 23
IT Flavor
Flavoring materials
Food analysis
Isotope dilution mass spectrometry
Standard substances, analytical
(synthesis of deuterated volatile aldehydes as lipid degrdn. products to be used as internal stds. in isotope diln. **assays**)
IT 213595-54-1P 239440-84-7P, Hexanal-5,6-d2 239440-86-9P 239440-87-0P
RL: ARU (Analytical role, unclassified); FFD (Food or feed use); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(synthesis of deuterated volatile aldehydes as lipid degrdn. products to be used as internal stds. in isotope diln. **assays**)
IT 66-25-1, Hexanal 110-62-3, Pentanal 821-10-3, 1,4-Dichloro-2-butyne 821-41-0, 5-Hexen-1-ol 865-49-6 925-93-9, Ethanol-d 2463-53-8, 2-Nonenal 3685-19-6, (Z)-1-Methoxy-1-buten-3-yne 5910-87-2, (E,E)-2,4-Nonadienal 5921-73-3, 2-Nonyn-1-ol 25152-84-5, (E,E)-2,4-Decadienal
RL: RCT (Reactant)
(synthesis of deuterated volatile aldehydes as lipid degrdn. products to be used as internal stds. in isotope diln. **assays**)
IT **460-12-8P**, 1,3-Butadiyne
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(synthesis of deuterated volatile aldehydes as lipid degrdn. products to be used as internal stds. in isotope diln. **assays**)
REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:106056 HCAPLUS
DOCUMENT NUMBER: 128:164726
TITLE: Polymeric assemblies for sensitive colorimetric **assays**
INVENTOR(S): Charych, Deborah
PATENT ASSIGNEE(S): Regents of the University of California, USA
SOURCE: PCT Int. Appl., 70 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 11
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9804743	A1	19980205	WO 1997-US13253	19970728
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9738973	A1	19980220	AU 1997-38973	19970728

PRIORITY APPLN. INFO.: US 1996-22942 P 19960729
WO 1997-US13253 W 19970728

AB The present invention relates to a method for direct detection of analytes using color changes in liposomes which occur in response to selective binding to analytes to their surface. The placement and selection of the polymerizable group in the monomer utilized as a precursor in colorimetric film and liposome prodn. improves sensitivity and also provides a final color change reaction which is specific to an exact analyte concn.

IC ICM C12Q001-68
CC 9-16 (Biochemical Methods)
Section cross-reference(s): 14
ST polymeric assembly colorimetric **assay**
IT Peptides, uses
RL: NUU (Other use, unclassified); USES (Uses)
(Cell adhesion; polymeric assemblies for sensitive colorimetric **assays**)
IT Proteins (specific proteins and subclasses)
RL: ANT (Analyte); ANST (Analytical study)
(GABA binding; polymeric assemblies for sensitive colorimetric **assays**)
IT Viral infection
(Newcastle disease; polymeric assemblies for sensitive colorimetric **assays**)
IT Receptors
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Transmembrane; polymeric assemblies for sensitive colorimetric **assays**)
IT Sialic acids
RL: NUU (Other use, unclassified); USES (Uses)
(derivs.; polymeric assemblies for sensitive colorimetric **assays**)
IT Parotid gland
(diseases, mumps; polymeric assemblies for sensitive colorimetric **assays**)
IT Sexually transmitted diseases

(gonorrhea; polymeric assemblies for sensitive colorimetric **assays**)

IT Alcohols, uses
Amines, uses
Carboxylic acids, uses
Esters, uses
Fluoro hydrocarbons
Hydrocarbons, uses
Phosphates, uses
Sulfates, uses
RL: ARG (Analytical reagent use); NUU (Other use, unclassified); ANST (Analytical study); USES (Uses)
(liposomes contg.; polymeric assemblies for sensitive colorimetric **assays**)

IT Salivary gland diseases
(mumps; polymeric assemblies for sensitive colorimetric **assays**)

IT Physiological saline solutions
(phosphate-buffered; polymeric assemblies for sensitive colorimetric **assays**)

IT Bacillus anthracis
Bacteria (Eubacteria)
Buffers
Candida albicans
Cell (biological)
Chlamydia
Colorimetry
Electron beams
Encephalomyelitis
Escherichia coli
Gamma ray
Human herpesvirus 4
Human immunodeficiency virus
Human poliovirus
Influenza virus
Liposomes
Malaria
Meningitis
Molecular weight
Neutrophil
Organic solvents
Orthomyxoviridae
Paramyxoviridae
Pathogenic microorganism
Pharmaceutical analysis
Physiological saline solutions
Rabies
Reoviridae
Sendai virus
Streptococcus
UV radiation
Virus
X-ray
(polymeric assemblies for sensitive colorimetric **assays**)

IT 5-HT receptors
Cholera toxin
D2 receptor (dopamine)
Enterotoxins
Enzymes, analysis
Hormones (animal), analysis

IgG
Pertussis toxin
Proteins (general), analysis
Toxins
RL: ANT (Analyte); ANST (Analytical study)
(polymeric assemblies for sensitive colorimetric **assays**)

IT Complement receptors
.beta.-Adrenoceptors
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(polymeric assemblies for sensitive colorimetric **assays**)

IT Antibodies
Catalytic antibodies
Monoclonal antibodies
Phospholipids, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(polymeric assemblies for sensitive colorimetric **assays**)

IT Polymers, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(polymeric assemblies for sensitive colorimetric **assays**)

IT Alkenes, uses
RL: NUU (Other use, unclassified); USES (Uses)
(polymeric assemblies for sensitive colorimetric **assays**)

IT Alkynes
RL: NUU (Other use, unclassified); USES (Uses)
(polymeric assemblies for sensitive colorimetric **assays**)

IT CD26 (antigen)
RL: NUU (Other use, unclassified); USES (Uses)
(polymeric assemblies for sensitive colorimetric **assays**)

IT CD4 (antigen)
RL: NUU (Other use, unclassified); USES (Uses)
(polymeric assemblies for sensitive colorimetric **assays**)

IT Imides
RL: NUU (Other use, unclassified); USES (Uses)
(polymeric assemblies for sensitive colorimetric **assays**)

IT Ligands
RL: NUU (Other use, unclassified); USES (Uses)
(polymeric assemblies for sensitive colorimetric **assays**)

IT Oligosaccharides, uses
RL: NUU (Other use, unclassified); USES (Uses)
(polymeric assemblies for sensitive colorimetric **assays**)

IT Polysiloxanes, uses
RL: NUU (Other use, unclassified); USES (Uses)
(polymeric assemblies for sensitive colorimetric **assays**)

IT Sialic acids
RL: NUU (Other use, unclassified); USES (Uses)
(polymeric assemblies for sensitive colorimetric **assays**)

IT Oligosaccharides, uses
RL: NUU (Other use, unclassified); USES (Uses)
(tetrasaccharides; polymeric assemblies for sensitive colorimetric **assays**)

IT Toxins
RL: ANT (Analyte); ANST (Analytical study)
(toxin A; polymeric assemblies for sensitive colorimetric **assays**)

IT Encephalomyocarditis virus
(tx; polymeric assemblies for sensitive colorimetric **assays**)

IT Viral infection
(vaccinia; polymeric assemblies for sensitive colorimetric **assays**)

IT 59-23-4, D-Galactose, analysis 9001-84-7, Phospholipase a2
RL: ANT (Analyte); ANST (Analytical study)
(polymeric assemblies for sensitive colorimetric **assays**)
IT 51-84-3, Acetylcholine, analysis
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(polymeric assemblies for sensitive colorimetric **assays**)
IT 50-67-9, Serotonine, uses 51-61-6, Dopamine, uses 56-12-2, Gaba, uses 749-02-0, Spiperone 25550-58-7, Dinitrophenol 39324-30-6, Pepstatin
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(polymeric assemblies for sensitive colorimetric **assays**)
IT 52-90-4, L-Cysteine, uses 56-40-6D, Glycine, liposomes contg. 56-41-7D, L-Alanine, liposomes contg. 56-87-1D, L=Lysine, liposomes contg. 64-17-5D, Ethanol, liposomes contg. 65-85-0D, Benzoic acid, liposomes contg. 67-56-1D, Methanol, liposomes contg. 80-48-8D, liposomes contg. 93-58-3D, liposomes contg. 103-33-3D, Azobenzene, liposomes contg. 107-15-3D, 1,2-Ethanediamine, liposomes contg. 112-30-1D, 1=Decanol, liposomes contg. 141-43-5D, liposomes contg. 492-61-5D, .beta.-D-Glucopyranose, liposomes contg. 513-29-1D, Glycine sulfate, liposomes contg. 541-59-3D, 1H-Pyrrole-2,5-dione, liposomes contg. 563-24-6D, liposomes contg. 929-75-9 2603-10-3D, liposomes contg. 6066-82-6 6135-31-5D, liposomes contg. 6642-30-4D, liposomes contg. 7558-79-4D, Disodium phosphate, liposomes contg. 7632-05-5 13940-21-1D, Mercapto, liposomes contg. 21291-99-6, 1,2,3-Propanetriamine 28508-23-8D, liposomes contg. 33013-98-8D, liposomes contg. 112670-62-9D, liposomes contg. 132316-46-2 202802-14-0D, liposomes contg. 202802-15-1D, liposomes contg. 202802-16-2D, liposomes contg. 202802-17-3D, liposomes contg. 202802-18-4 202802-19-5 202802-20-8 202802-21-9 202802-22-0 202802-23-1 202802-24-2 202802-25-3 202802-26-4 202932-70-5D, liposomes contg.
RL: ARG (Analytical reagent use); NUU (Other use, unclassified); ANST (Analytical study); USES (Uses)
(polymeric assemblies for sensitive colorimetric **assays**)
IT 56-23-5, Carbon tetrachloride, uses 62-53-3, Benzenamine, uses 67-66-3, uses 71-43-2, Benzene, uses 75-05-8, Acetonitrile, uses 75-09-2, Methylene chloride, uses 77-86-1, Trizma 109-97-7, Pyrrole 110-02-1, Thiophene 110-54-3, Hexane, uses 110-82-7, Cyclohexane, uses **460-12-8, Diacetylene** 1132-61-2, Mops 7333-25-7, 10,12-Octadecadiynoic acid 7365-45-9, Hepes 7732-18-5, Water, uses 19295-34-2, Vinylpyridinium 37221-79-7, Vasoactive intestinal peptide 62229-50-9, Epidermal growth factor 66990-30-5, 10,12-Tricosadiynoic acid 66990-32-7, 10,12-Pentacosadiynoic acid 104443-62-1, Ganglioside GM1 106362-32-7, Peptide t 106362-32-7D, Peptide t, derivs. 178560-65-1, 5,7-Docosadiynoic acid 182047-75-2, 5,7-Tetracosadiynoic acid
RL: NUU (Other use, unclassified); USES (Uses)
(polymeric assemblies for sensitive colorimetric **assays**)

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=> fil wpids
FILE 'WPIDS' ENTERED AT 09:05:40 ON 14 MAR 2002
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                DEL HIS Y
L1           723 S POLYDIACETYLENE# OR POLY DI ACETYLENE# OR POLYDI ACETYLENE# O
L2         30085 S IMMUNOASSAY? OR ASSAY?
L3        115641 S ?ARRAY?
L4             5 S L1 AND L2
L5             5 S L3 AND L1
L6             9 S L4 OR L5
L7            30 S L1 (6A) SUBSTRAT?
L8         58242 S ?FLUORES?
L9             1 S L7 AND L8
L10        11489 S (DETECT? OR ANALYS? ) (5A) (ANALYTE? OR ANTIBOD? OR TOXIN# OR
L11           10 S L1 AND L10
L12           13 S L6 OR L9 OR L11
L13        78540 S FLUORO?
L14           11 S L13 AND L1
L15            3 S L14 AND (L2 OR L3 OR SUBSTRAT?  OR ANALYT? OR ANTIBOD? OR TOX
L16           15 S L12 OR L15

     FILE 'WPIDS' ENTERED AT 09:05:40 ON 14 MAR 2002

=> d .wp 1-15

L16  ANSWER 1 OF 15  WPIDS COPYRIGHT 2002   DERWENT INFORMATION LTD
AN   2002-105080 [14]   WPIDS
CR   1996-393530 [39]; 1997-393702 [36]; 1998-457256 [39]; 1998-495982 [42];
     1999-204741 [17]; 2000-071650 [06]; 2000-147218 [11]; 2001-225814 [14];
     2002-089133 [70]
DNN  N2002-078117       DNC C2002-032204
TI   New composition, useful for detecting various analytes
     , comprises one or more biopolymeric materials consisting of several
     polymerized self-assembling lipid monomers and one or more nucleic acid
     ligands.
DC   A89 B04 D16 S03
IN   CHARYCH, D H; JONAS, U
PA   (REGC) UNIV CALIFORNIA
CYC  1
PI   US 6306598    B1 20011023 (200214)*      96p
```

ADT US 6306598 B1 CIP of US 1992-976697 19921113, CIP of US 1993-159927 19931130, CIP of US 1994-289384 19940811, CIP of US 1995-389475 19950213, Div ex US 1996-592724 19960126, CIP of US 1996-609312 19960301, CIP of US 1996-328237 19961024, Provisional US 1997-38383P 19970214, Provisional US 1997-39749P 19970303, Provisional US 1997-50496P 19970623, Div ex US 1997-920501 19970829, CIP of US 1997-944323 19971008, CIP of US 1998-23898 19980213, CIP of US 1998-33557 19980302, Provisional US 1998-90266P 19980622, CIP of US 1998-103344 19980623, US 1999-337973 19990621, CIP of US 1999-461509 19991214, CIP of US 2000-500295 20000208

FDT US 6306598 B1 Div ex US 6001556, Div ex US 6022748

PRAI US 2000-500295 20000208; US 1992-976697 19921113; US 1993-159927 19931130; US 1994-289384 19940811; US 1995-389475 19950213; US 1996-592724 19960126; US 1996-609312 19960301; US 1996-328237 19961024; US 1997-38383P 19970214; US 1997-39749P 19970303; US 1997-50496P 19970623; US 1997-920501 19970829; US 1997-944323 19971008; US 1998-23898 19980213; US 1998-33557 19980302; US 1998-90266P 19980622; US 1998-103344 19980623; US 1999-337973 19990621; US 1999-461509 19991214

AB US 6306598 B UPAB: 20020301

NOVELTY - A composition comprising one or more biopolymeric materials consisting of several polymerized self-assembling lipid monomers and one or more nucleic acid ligands, where the binding of an analyte to the nucleic acid ligand causes a conformational change in the polymerized self-assembling lipid monomers, resulting in a color change in the biopolymeric materials, is new.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a device comprising one or more of the biopolymeric materials immobilized on the device.

USE - The compositions and methods are useful for direct colorimetric **detection** of **analytes** using color changes that occur in biopolymeric material in response to selective binding of analytes. The biopolymeric materials may be used to **detect** a large variety of **analytes** including molecules, microorganisms, membrane receptors, membrane fragments, volatile organic compounds, enzymes, drugs, and antibodies.

Dwg.0/50

L16 ANSWER 2 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 2002-089133 [12] WPIDS

CR 1996-393530 [39]; 1997-393702 [36]; 1998-457256 [39]; 1998-495982 [42]; 1999-204741 [17]; 2000-071650 [06]; 2000-147218 [11]; 2001-225814 [14]; 2002-105080 [71]

DNN N2002-065665 DNC C2002-027360

TI New composition comprising a polymer molecule, a spacer molecule and a ligand is used for the direct **detection** of **analytes** has rapid response times, selectivity and optical signals that are easily monitored.

DC A89 A96 B04 D16 J04 P34 P73 S03

IN CHARYCH, D J; MYUNG-GI-BAEK,

PA (REGC) UNIV CALIFORNIA

CYC 1

PI US 2001026915 A1 20011004 (200212)* 38p

ADT US 2001026915 A1 CIP of US 1992-976697 19921113, CIP of US 1993-159927 19931130, CIP of US 1994-289384 19940811, CIP of US 1994-328237 19941024, CIP of US 1995-389475 19950213, Div ex US 1995-389475 19950213, Div ex US 1996-592724 19960126, CIP of US 1996-609312 19960301, Provisional US 1997-38383P 19970214, Provisional US 1997-39749P 19970303, Provisional US 1997-50496P 19970623, Div ex US 1997-920501 19970829, CIP of US 1997-944323 19971006, CIP of US 1998-23898 19980213, CIP of US 1998-33557 19980302, Provisional US 1998-90266P 19980622, CIP of US 1998-103344

19980623, CIP of US 1999-337973 19990621, Provisional US 1999-170190P 19991210, CIP of US 1999-461509 19991214, CIP of US 2000-500295 20000208, US 2000-734410 20001211

FDT US 2001026915 A1 Div ex US 6001556, Div ex US 6022748, CIP of US 6180135, CIP of US 6183772

PRAI US 2000-734410 20001211; US 1992-976697 19921113; US 1993-159927 19931130; US 1994-289384 19940811; US 1994-328237 19941024; US 1995-389475 19950213; US 1996-592724 19960126; US 1996-609312 19960301; US 1997-38383P 19970214; US 1997-39749P 19970303; US 1997-50496P 19970623; US 1997-920501 19970829; US 1997-944323 19971006; US 1998-23898 19980213; US 1998-33557 19980302; US 1998-90266P 19980622; US 1998-103344 19980623; US 1999-337973 19990621; US 1999-170190P 19991210; US 1999-461509 19991214; US 2000-500295 20000208

AB US2001026915 A UPAB: 20020301

NOVELTY - A composition comprising a polymer molecule, selected from thiophene, polythiophene and glycopolythiophene, a spacer molecule, and a ligand, is new. The composition undergoes a color change when an analyte binds to the ligand.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(1) **detecting** the presence of an **analyte** comprising:

(a) providing the composition and a sample suspected of containing an analyte;

(b) contacting the polymer molecule with the sample; and

(c) detecting a color change caused by the binding of the analyte to the ligand; and

(2) a device comprising the biopolymeric composition.

USE - The composition is used for the direct **detection** of **analytes**.

ADVANTAGE - The materials used show rapid response times, selectivity and optical signals that are easily monitored.

DESCRIPTION OF DRAWING(S) - The drawing shows a schematic representation of a double-sandwiched biochromic sensory device based on mannose-PTs.

Dwg.11/13

L16 ANSWER 3 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 2001-648404 [74] WPIDS

DNN N2001-484493 DNC C2001-191336

TI **Detection** of **analytes** in a sample useful to **detect** chemical and biological species in air and solution uses a three-dimensional **array** of a **polydiacetylene** backbone with a **substrate** incorporated and monitors changes in **fluorescence**.

DC A12 A89 B04 D16 S03

IN REPPY, M A; SALLER, C F; SPORN, S A

PA (ANAL-N) ANALYTICAL BIOLOGICAL SERVICES INC

CYC 94

PI WO 2001071317 A1 20010927 (200174)* EN 54p

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

AU 2001050883 A 20011003 (200210)

ADT WO 2001071317 A1 WO 2001-US8790 20010320; AU 2001050883 A AU 2001-50883 20010320

FDT AU 2001050883 A Based on WO 200171317
PRAI US 2000-190091P 20000320
AB WO 200171317 A UPAB: 20011217
NOVELTY - An **analyte** is **detected** in a sample by contacting with a three-dimensional **array** (e.g. liposomes) of a **polydiacetylene** backbone which has a **substrate** incorporated which has affinity for the **analyte**, can function as a binder to the **analyte** or can react with the **analyte**, and **detecting** a change in **fluorescence** of the **array**.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:
(1) **detecting** an **analyte** as above but using a two-dimensional **array** (i.e. a film) of a **polydiacetylene** backbone incorporating a **substrate**, in which up to 90 % (optionally up to 60 %) of **diacetylenes** are terminated with groups specifically binding the **analyte**; and
(2) **detecting** an **analyte** as claimed but in which **arrays** are suspended in solution and **analyte** is **detected** by **detecting** change in polarization of the **fluorescence** of **arrays** when excited with polarized light.
USE - The method is useful to detect chemical and biological species in air and solution e.g. small organic molecules, solvents, **toxins**, **enzymes**, peptides, bacteria and viruses etc., useful in drug discovery, medical diagnosis, food safety, pathogen detection, environmental monitoring etc.
Dwg.0/5

L16 ANSWER 4 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD
AN 2001-225814 [23] WPIDS
CR 1996-393530 [39]; 1997-393702 [36]; 1998-457256 [39]; 1998-495982 [42]; 1999-204741 [17]; 2000-071650 [06]; 2000-147218 [11]; 2002-089133 [70]; 2002-105080 [71]
DNN N2001-160382 DNC C2001-067365
TI Doped liposomes that change color in the presence of an analyte comprise a polymerized diyne, one or more ligands having affinity for the analyte and a dopant having no affinity for the analyte.
DC A96 B04 B07 S03
IN CHARYCH, D; STEVENS, R C
PA (REGC) UNIV CALIFORNIA
CYC 1
PI US 6183772 B1 20010206 (200123)* 23p
ADT US 6183772 B1 CIP of US 1995-389475 19950213, US 1996-609312 19960301
PRAI US 1996-609312 19960301; US 1995-389475 19950213
AB US 6183772 B UPAB: 20020301
NOVELTY - Composition comprising doped liposomes that change color in the presence of an analyte is claimed, where the doped liposomes comprise: (a) a polymerized diyne; (b) one or more ligands having affinity for the analyte; and (c) a dopant having no affinity for the analyte.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:
(1) production of such liposomes, comprising: combining a diyne monomer with the ligand(s) and dopant in an organic solvent; evaporating the solvent; adding an aqueous solution; heating the mixture above the main phase transition temperature of the monomer; agitating the mixture; cooling the mixture to at least 4 deg. C to form doped liposomes; and polymerizing the monomer; and
(2) Doped liposomes made by the above method.
USE - The composition is useful in colorimetric **assays**, e.g. for viruses, bacteria, parasites, drugs, hormones, cell wall fragments, membrane fragments, membrane receptors and enzymes.

Dwg.0/6

L16 ANSWER 5 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD
AN 2001-137749 [14] WPIDS
DNN N2001-100359 DNC C2001-040401
TI New charge neutral conjugated polymer e.g. polypyrrole with functional groups for binding biomolecule probe, useful as biosensor for conducting analysis of, or detecting biological substances e.g. DNA, RNA or polypeptides.
DC A26 A89 B04 D16 S03
IN CHOONG, V; LI, C; MARACAS, G; SHI, S
PA (MOTI) MOTOROLA INC
CYC 91
PI WO 2000077523 A1 20001221 (200114)* EN 32p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2000054757 A 20010102 (200121)
ADT WO 2000077523 A1 WO 2000-US15832 20000609; AU 2000054757 A AU 2000-54757 20000609
FDT AU 2000054757 A Based on WO 200077523
PRAI US 1999-138437P 19990610
AB WO 200077523 A UPAB: 20010312
NOVELTY - A charge neutral conjugated polymer having functional groups for binding a biomolecule probe, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) an electrode in electrical communication with the charge neutral conjugated polymer;

(2) an **array** of electrodes;

(3) a biosensor devices for detecting biomolecules comprising (a) the electrode or (b) the **array** of electrodes, where (a) and (b) are in electrical communication with a matrix of charge neutral conjugated polymer having a functional group, and where the biomolecule probe is covalently linked to the functional group and a means for electrically detecting the binding of the biomolecule to the biomolecule probe;

(4) a method for determining an analyte in a test sample comprising:

(a) providing an electrode that is in electrical communication with a matrix of charge neutral conjugated polymer covalently linked to a binding group, which directly or indirectly binds to the analyte;

(b) contacting the matrix of charge neutral conjugated polymer with the test sample containing the analyte; and

(c) electrically **detecting** the **analyte** bound to the neutral conjugated polymer; and

(5) a method for preparing an analytical electrode comprising:

(A) electrochemically polymerizing pyrrole and a functionalized pyrrole to provide an oxidized polypyrrole functionalized pyrrole copolymer;

(B) electrically depositing the copolymer on an electrode;

(C) electrically reducing the copolymer to provide an electrically neutralized copolymer; and

(D) covalently linking a biomolecule probe that directly or indirectly binds an analyte to the functionalized pyrrole in the copolymer.

USE - The charge neutral conjugated polymer is useful as a biosensor for conducting analysis of or detecting biological substances such as DNA, RNA or polypeptides.

ADVANTAGE - Compared to prior art, the present invention makes use of a functionalized polymer or copolymer in its neutral state, instead of conductive state as the supporting matrix for biomolecule probe attachment or entrapment in a biomolecule detection device. The charge neutral functionalized polymer or copolymer has low electric background noise when used in electric detection of biomolecules. It also does not quench fluorescent signal when used in fluorescent detection of biomolecules. In both cases, the resulting devices have significantly improved signal to noise ratio, thus enhancing the sensitivity of biomolecule detection. Dwg.0/10

L16 ANSWER 6 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD
AN 2000-656038 [63] WPIDS
DNN N2000-486367 DNC C2000-198482
TI **Detecting analyte** which is non-reactive with lipids or polymer in a sample for distinguishing between a native peptide and its analog comprises causing a non-chemical change in a polymeric matrix that is detected by a color transition.
DC A96 B04 S03
IN JELINEK, R
PA (UYNE) UNIV BEN-GURION NEGEV
CYC 92
PI WO 2000055623 A2 20000921 (200063)* EN 41p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2000031889 A 20001004 (200101)
EP 1161688 A2 20011212 (200204) EN
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
ADT WO 2000055623 A2 WO 2000-IL158 20000314; AU 2000031889 A AU 2000-31889 20000314; EP 1161688 A2 EP 2000-909610 20000314, WO 2000-IL158 20000314
FDT AU 2000031889 A Based on WO 200055623; EP 1161688 A2 Based on WO 200055623
PRAI IL 1999-129003 19990315
AB WO 200055623 A UPAB: 20001205
NOVELTY - **Detecting** an **analyte** (A) in a sample (S) involves introducing into (S) or into a polymeric matrix (PM) comprising lipids and a polymer (P) with an absorption band that may be shifted from a first to second wavelength in the visible region, a unit which enables (A) to cause a non-chemical change in PM, and then contacting (S) with PM and observing the color transition of PM.

DETAILED DESCRIPTION - **Detecting analyte** (A) which is non-reactive with lipids or polymer (P) in a sample (S) involves introducing into (S) or into a polymeric matrix (PM) comprising lipids and (P) with an absorption band that may be shifted from a first to second wavelength in the visible region, a unit which enables (A) to cause a non-chemical change in PM, and then contacting (S) with PM and observing the color transition of PM.

USE - The method is useful for distinguishing between a native peptide and its analog. The method is useful for distinguishing between a first analogue of a native peptide and a second analogue. The method is also useful for evaluating the biological activity of an analog of a native peptide (claimed). The colorimetric **assay** can be applied for rapid screening of anti-bacterial peptide activities, and could provide structural and functional information on peptide-membrane interactions and mechanisms of membrane permeability. Because of the direct relationships between the peptide sequences and color change of the

polymeric matrix, the method can be used in biopharmaceutical applications and biochemical research-and-development. Among the potential applications are:

(1) high-throughout screening of antibiotic peptides libraries;

(2) diagnostic kits for antibiotic peptides;

(3) development of anti-microbial drugs which induce membrane perturbations lysis; and

(4) elucidating the factors affecting peptide-membrane interactions.

ADVANTAGE - The presence of several cations in the tested sample does not diminish the sensitivity of the detection method. The detection method is sensitive to the amino acid sequence of the peptides. The color induced in the solutions containing the polymeric matrix occur within seconds after addition of the peptides. The speed of the **assay**, combined with the simplicity of detection, would be an important advantage over conventional anti-bacterial **assays**, which require, in general, much longer times to carry out. The **assay** is robust and can be easily expanded to include a variety of membrane models.

DESCRIPTION OF DRAWING(S) - The figure shows the schematic representation of the polymeric matrix.

Dwg.1/12

L16 ANSWER 7 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD
AN 2000-303848 [26] WPIDS
DNN N2000-226966 DNC C2000-092358
TI **Toxin** contamination **detector** for **detecting** contaminants in packaged foodstuffs comprises bar code printed on substrate, and a toxin indicator.
DC A89 D13 D15 D16 J04 S03
IN CAMACHO, V S; LENTINI, D P
PA (CAMA-I) CAMACHO V S; (LENT-I) LENTINI D P; (VERS-N) VERSEAU GROUP
CYC 35
PI WO 2000020863 A1 20000413 (200026)* EN 28p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW
W: CN IN JP
EP 1119771 A1 20010801 (200144) EN
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
ADT WO 2000020863 A1 WO 1999-US23318 19991006; EP 1119771 A1 EP 1999-951821 19991006, WO 1999-US23318 19991006
FDT EP 1119771 A1 Based on WO 200020863
PRAI US 1999-130092P 19990420; US 1998-103434P 19981006
AB WO 200020863 A UPAB: 20000531

NOVELTY - The **toxin** contamination **detector** comprises a substrate, a bar code (110) printed on the substrate having a first color to reflect light from a bar code scanning device to produce a bar code result, and a toxin indicator having a second color in the absence of a toxin which does not alter the bar code result, and a third color that changes the bar code result to indicate the presence of toxins.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(a) a method for identifying toxin contamination;

(b) a system for identifying a toxin contaminant comprising a container (100) including **toxin** contamination **detector** as above, a scanner for scanning the detector, and a processor for processing signals from the detector to decode the bar code information; and

(c) a water purifier comprising an inlet for receiving water having one or more impurities, a purifier for removing at least a portion of the impurities, and a colorimetric **detector** comprising the above **toxin detector** for identifying the presence of the

impurities.
USE - For detecting contaminants in a packaged foodstuff.
ADVANTAGE - The detector is accurate, easy to produce and highly scalable. It can be readily perceived at various check points in the distribution chain and at the point of sale.
DESCRIPTION OF DRAWING(S) - The figure shows a bottom view of a packaged foodstuff.
Container 100
Bar code 110
Dwg.1B/7

L16 ANSWER 8 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD
AN 2000-147218 [13] WPIDS
CR 1996-393530 [39]; 1997-393702 [36]; 1998-457256 [39]; 1998-495982 [42]; 1999-204741 [17]; 2000-071650 [06]; 2001-225814 [14]; 2002-089133 [70]; 2002-105080 [71]
DNN N2000-417837 DNC C2000-168574
TI Biopolymeric composition for **detecting analytes** e.g. pathogens, proteins or enzymes, comprises biopolymeric material that changes color in presence of analyte.
DC A96 B04 D16 S03
IN CHARYCH, D H; JONAS, U
PA (REGC) UNIV CALIFORNIA
CYC 22
PI WO 9967423 A1 19991229 (200013)* EN 175p
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: AU CA JP
AU 9947047 A 20000110 (200025)
EP 1112377 A1 20010704 (200138) EN
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
ADT WO 9967423 A1 WO 1999-US14029 19990622; AU 9947047 A AU 1999-47047 19990622; EP 1112377 A1 EP 1999-930522 19990622, WO 1999-US14029 19990622
FDT AU 9947047 A Based on WO 9967423; EP 1112377 A1 Based on WO 9967423
PRAI US 1999-90266 19990621; US 1998-90266P 19980622
AB WO 9967423 A UPAB: 20020301
NOVELTY - Composition (A) comprising biopolymeric material (I) that changes color in presence of an analyte (II). (I) consists of many polymerized self-assembling monomers (III) and at least one nucleic acid ligand (IV).
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:
(1) a device containing at least one immobilized (I), and
(2) method for detecting (II) from its ability to cause a color change in (I).
USE - The method is used to **detect** nucleic acids, **enzymes**, pathogens (especially viruses, bacteria, parasites or fungi), drugs, receptor ligands, antigens, ions, proteins, hormones, blood components, antibodies or lectins, e.g. for diagnosis of pathogens or genetic diseases, but also more generally organic solvents (e.g. in pharmaceutical products, air or water samples) or other small organic molecules. It can also be used to identify enzyme inhibitors; to screen enzymes or other catalytic molecules for activity and in drug development (by detecting competitive inhibition of a natural binding event).
ADVANTAGE - (II) can be detected directly and rapidly, either with the naked eye (e.g. for home use) or instrumentally. The method can be made quantitative; is easily adapted to high throughput screening and vesicles based on (I) have excellent storage stability.
Dwg.0/50

L16 ANSWER 9 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 2000-071650 [06] WPIDS
CR 1996-393530 [39]; 1997-393702 [36]; 1998-457256 [39]; 1998-495982 [42]; 1999-204741 [17]; 2000-147218 [11]; 2001-225814 [14]; 2002-089133 [70]; 2002-105080 [71]
DNC C2000-020448
TI Polymeric **assay** film for direct colorimetric detection of small molecules such as pathogens.
DC A89 B04 D16 J04
IN CHARYCH, D; NAGY, J; SPEVAK, W
PA (REGC) UNIV CALIFORNIA
CYC 1
PI US 6001556 A 19991214 (200006)* 20p
ADT US 6001556 A CIP of US 1992-976697 19921113, CIP of US 1992-982189 19921125, Cont of US 1993-159927 19931130, US 1996-592724 19960126
PRAI US 1993-159927 19931130; US 1992-976697 19921113; US 1992-982189 19921125; US 1996-592724 19960126
AB US 6001556 A UPAB: 20020301
NOVELTY - Polymeric **assay** films for direct colorimetric detection tests of small molecules, are new.

DETAILED DESCRIPTION - A polymerized bilayer film (I) comprises:

(1) a conjugated polymer backbone (comprising a number of polymerized **diacetylene** monomers);

(2) linker groups (which are covalently conjugated to the polymer backbone);

(3) ligands (either sialic acid and/or carbohydrates with ordering heads groups covalently conjugated to the linker groups) with direct affinity for an analyte; and

(4) a support structure.

The ordering head groups are bound to the surface of the conjugated polymer backbone in positions not occupied by the linker groups. The polymerized bilayer film undergoes a detectable color change upon binding of the analyte to the ligands.

INDEPENDENT CLAIMS are also included for the following:

(1) a method (II) of producing (I), comprising:

(a) providing:

(i) ligands (carbohydrates) with a direct affinity for an analyte;

(ii) linker groups with 2 terminal ends;

(iii) lipid monomers;

(iv) lipid monomers comprising ordering head groups; and

(v) a support surface;

(b) attaching the ligands to the lipid monomers so that the ligands are attached to one end of the linkers and the lipid monomers are attached to the other (to produce monomer-linear structural unit-ligand groups);

(c) mixing the monomer-linear structural unit-ligand groups with lipid monomers comprising ordering heads;

(d) spreading the mixture from step (c) on the support to form a bilayer film; and

(e) polymerizing the bilayer film (to form the polymerized bilayer film (I)); and

(2) a method for **detecting** an **analyte**, comprising contacting (I) with a sample thought to contain the **analyte** and **detecting** a color change in (I) (a color change is indicative of the presence of the analyte).

USE - (I) may be used for the direct detection of small molecules such as pathogens (e.g. influenza viruses, herpes virus, human immunodeficiency virus (HIV), coronavirus, encephalomyelitis, chlamydia, rotavirus, polyomavirus, Streptococcus, Salmonella, sendai virus, mumps virus, Newcastle Disease virus, myxovirus, Escherichia coli, encephalomyocarditis virus and Plasmodium (claimed)). Other substances such as industrial materials, enzymes, hormones, cell wall fragments,

blood components, disease indicators, cell components, antibodies, lectins and genetic material may also be detected using (I).

(I) also has application in feedstock and effluent monitoring, drug development and other types of medical testing.

ADVANTAGE - The use of (I) is easily automated, especially if a spectrometer is used to detect color changes. A multiple well system may be produced from (I) which allows inexpensive screening and sequential testing for analytes. (I) represents a new approach to the direct detection of a material using color changes in a monomolecular film which occurs when specifically bound to the target molecule. (I) is simple and inexpensive to produce.

(I) provides the advantages of both an **immunoassay** and chemical analysis in a single system. It has the inherent direct **assay** advantages of analytical chemistry methods and has a substantial environmental range of testing beyond that of **immunoassays**. This allows accommodation of various analytes in their most advantageous environmental parameters. Additionally, (I) allows rigorous direct analysis to occur even in very narrow environmental ranges, previously unavailable with analytical chemical techniques. The speed and simplicity of the color change indicator of (I) are its hallmark advantages.

Dwg.0/6

L16 ANSWER 10 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD
AN 2000-023184 [02] WPIDS
DNN N2000-017268 DNC C2000-005605
TI Material deposition method for forming multicolored pixelate **array** of organic electroluminescent material on substrate.
DC A89 B04 D16 G06 J04 L03 P74 P84 U14
IN DUFFY, D C; JACKMAN, R J; JENSEN, K F; VAETH, K M; WHITESIDES, G M
PA (HARD) HARVARD COLLEGE; (MASI) MASSACHUSETTS INST TECHNOLOGY
CYC 22
PI WO 9954786 A1 19991028 (200002)* EN 65p
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: CA JP US
EP 1080394 A1 20010307 (200114) EN
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
ADT WO 9954786 A1 WO 1999-US8623 19990420; EP 1080394 A1 EP 1999-918698 19990420, WO 1999-US8623 19990420
FDT EP 1080394 A1 Based on WO 9954786
PRAI US 1998-63742 19980421
AB WO 9954786 A UPAB: 20000112

NOVELTY - A mask (30) shields predetermined portion of the surface of the substrate (72). An agent is applied through the channel of the mask to unshielded portion of the substrate while preventing application of the agent to the predetermined portion. The dimension of the channel is less than 1 mm.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for mask.

USE - For forming multicolored pixelate **array** of organic electroluminescent material on substrate for flat panel display.

ADVANTAGE - Provides high resolution optical device that can be multicolor and can display electroluminescence. Forms seal against substrate surface in the absence of any clamping apparatus. Avoids use of solvent during fabrication and does not require encapsulation of pixels between formation steps.

DESCRIPTION OF DRAWING(S) - The figure shows the formation of **array** of different materials on surface using multiple masks.

Mask 30
Substrate 72

Dwg.7/18

L16 ANSWER 11 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD
AN 1999-510416 [43] WPIDS
DNN N1999-380529 DNC C1999-149301
TI Method for producing an aligned chemically adsorbed monomolecular film for antifouling, liquid crystal alignment and polarization films.
DC A26 A32 A85 A89 L03 P42 P81 U14
IN NOMURA, T; OGAWA, K; OOTAKE, T
PA (MATU) MATSUSHITA ELECTRIC IND CO LTD; (MATU) MATSUSHITA DENKI SANGYO KK
CYC 29
PI EP 942314 A2 19990915 (199943)* EN 25p
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
JP 11253873 A 19990921 (199950) 7p
JP 11258611 A 19990924 (199951) 11p
CN 1228543 A 19990915 (200001)
US 6054190 A 20000425 (200027)
KR 99077795 A 19991025 (200052)
ADT EP 942314 A2 EP 1999-103984 19990311; JP 11253873 A JP 1998-60202 19980311; JP 11258611 A JP 1998-60203 19980311; CN 1228543 A CN 1999-103654 19990311; US 6054190 A US 1999-264590 19990308; KR 99077795 A KR 1999-8141 19990311
PRAI JP 1998-60203 19980311; JP 1998-60202 19980311
AB EP 942314 A UPAB: 19991020
NOVELTY - A method for producing an aligned chemically adsorbed monomolecular film is a two step process of:

(1) formation of a monomolecular film by chemisorption on a hydrophilic surface of a base material by contact of the base material with a silane-based surfactant having a carbon chain or a siloxane bond chain so as to cause a chemical reaction, thereby bonding one end of the surfactant molecule to the hydrophilic surface and

(2) orientation of the base material with the monomolecular film in a predetermined orientation vapor washing the oriented base material with an organic solvent vapor and performing a first alignment of the surfactant molecules constituting the film by flow of condensation of the vapor on the film.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for:

(i) a process for producing a liquid crystal alignment film where the base material is a substrate provided with electrodes

(ii) a method for producing a liquid crystal display apparatus having the base material provided with an electrode group arranged in a matrix **array** and including a process of facing the surface having the electrode group with mother substrate at a predetermined interval and injecting a liquid crystal composition between the substrates.

USE - The method is useful for the production of aligned chemically adsorbed monomolecular films for use as antifouling film, liquid crystal alignment film, polarization film, phase retardation film or conductive film.

ADVANTAGE - The process allows high efficiency utilisation of the washing solution, excellent alignment of the film and preparation of multi-domain liquid crystal displays.

DESCRIPTION OF DRAWING(S) - The drawing is a cross-sectional view of a vapor washing process.

substrate 1
bath 3
solvent 4
condensed solvent 41
direction of flow 7

Dwg.2/9

L16 ANSWER 12 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD
AN 1999-359759 [31] WPIDS
DNN N1999-267977 DNC C1999-106632
TI New colorimetric sensor comprising **polydiacetylene** membrane, useful for **detecting** nucleic acids, **antibodies** and other naturally occurring ligands.
DC A96 B04 D16 J04 S03
IN INOUE, T; JO, Y; TAKADA, K
PA (HOGY-N) HOGY MEDICAL CO LTD
CYC 27
PI EP 926497 A2 19990630 (199931)* EN 11p
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
JP 11194130 A 19990721 (199939) 8p
JP 3138442 B2 20010226 (200114) 8p
US 6277652 B1 20010821 (200150)
ADT EP 926497 A2 EP 1998-310595 19981222; JP 11194130 A JP 1997-369574 19971226; JP 3138442 B2 JP 1997-369574 19971226; US 6277652 B1 US 1998-220389 19981223
FDT JP 3138442 B2 Previous Publ. JP 11194130
PRAI JP 1997-369574 19971226
AB EP 926497 A UPAB: 19991004
NOVELTY - The new colorimetric sensor comprises **polydiacetylene** membrane liposomes, a **polydiacetylene** film or fine particles coated with a **polydiacetylene** membrane, incorporating a protein having a reduced molecular weight low enough to cause a color change in the **polydiacetylene** membrane.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method for analysis of a biosample comprising, contacting the colorimetric sensor (as above) with a solution sample and utilizing an absorption measurement or a visual observation with the naked eye to detect color change in the **polydiacetylene** membrane.
USE - The colorimetric sensor is useful for analyzing different ligands (**analytes**) in biosamples e.g. **detection** of nucleic acids by a nucleic acid/antibody combination and all naturally occurring ligands.
ADVANTAGE - Biosamples are analyzed in a highly sensitive manner and the preparation of the membrane is facilitated. The sensor can be widely used for detecting ligands, especially those that cannot be detected by the prior art.
Dwg.0/4

L16 ANSWER 13 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD
AN 1998-506531 [43] WPIDS
CR 2001-136388 [04]
DNN N1998-394846 DNC C1998-152890
TI Surface modifying agents, useful for non-stick, non-wetting, friction reduction and corrosion inhibition - comprising aromatic, cis, trans-tetra-substituted ethene and **di acetylene** crosslinkable compounds, useful on metallic, non-metallic, organic, inorganic, ceramic, ceramic fibre, organic fibre and inorganic fibre surfaces.
DC E19 G02 L02 M13 M14 P42
IN GARG, N; GRAUPE, M; LEE, T R; SHON, Y
PA (UYHO-N) UNIV HOUSTON
CYC 80
PI WO 9840169 A1 19980917 (199843)* EN 87p
RW: AT BE CH DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW

W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM GW HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW

AU 9867009 A 19980929 (199906)

ADT WO 9840169 A1 WO 1998-US4897 19980311; AU 9867009 A AU 1998-67009 19980311

FDT AU 9867009 A Based on WO 9840169

PRAI US 1997-818334 19970314

AB WO 9840169 A UPAB: 20010312

Compositions comprising a surface modifying agent of formula (Rf) alpha -X-(Q) beta (VIII) in which Rf = **fluoro**-carbon containing group; X = CH2CH2, R'' or R'''; R'' = tetravalent atom, double bond or ring system; R''' = crosslinkable group chosen from acetylenic, diacetylenic, polyacetylenic, alpha amino acid, alpha hydroxy acid or dialkoxysilenyl; Q = (R)ii(E)jjZ; R and R' = carbon-containing group; E = NR', O, PR' or S; R' = a carbon-containing group; Z = hydrogen or CGG'; G = NR2, O, PR2 or S; G' = R2, NR22, OR2, PR22, or SR2; and R2 = hydrogen or a carbon-containing group; ii and jj = 0-1; alpha and beta = integers the sum of which is not greater than the maximum number of substituents X can accommodate.

Also claimed is a composition comprising: (i) a **substrate**; and (ii) a partial or complete monolayer coating of a surface modifying agent of formula (VIII).

USE - The compounds have fluorinated tail groups and surface reactive head groups; and are used to provide a partial or complete monolayer surface coatings on **substrates** (claimed). The surface modifying compounds can be used for any non-stick, non-wetting or corrosion inhibiting application, and/or friction reducing application. Suitable surfaces include metallic (e.g. gold, in examples), non-metallic, e.g. organic, inorganic, ceramic, ceramic fibre, organic fibre or inorganic fibre surfaces.

ADVANTAGE - Preparation of the surface modifying agents is low cost, highly effective and efficient. The surface can be patterned with one or more of the surface modifying agents by applying a mask to the surface, treating the exposed surface with a first agent, unmasking the masked surface and treating the untreated, exposed surface with a second agent, to generate surfaces with complex patterns of agents.

Dwg.5/9

L16 ANSWER 14 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 1995-066987 [09] WPIDS

DNN N1995-053165 DNC C1995-029634

TI Fluorescent lipid polymer-macromolecular ligand compsns. - used as detection element in ligand pref. haptenic or antigenic, as **assays**

DC A96 B04 S03

IN DER-BALAIN, G; JOHNSON, S; KENHEY, P; MATHIS, H; RIBI, H; SAUL, T; WITTY, T; DER-BALIAN, G; KENNEY, P

PA (BIOC-N) BIOCIRCUITS CORP

CYC 20

PI WO 9502183 A1 19950119 (199509)* EN 24p

RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE

W: CA JP

US 5415999 A 19950516 (199525) 8p

EP 660931 A1 19950705 (199531) EN

R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

JP 08501883 W 19960227 (199643) 26p

US 5618735 A 19970408 (199720) 6p

EP 660931 A4 19970528 (199746)

ADT WO 9502183 A1 WO 1994-US7636 19940707; US 5415999 A US 1993-89975

19930709; EP 660931 A1 EP 1994-921490 19940707, WO 1994-US7636 19940707; JP 08501883 W WO 1994-US7636 19940707, JP 1995-504162 19940707; US 5618735 A Div ex US 1993-89975 19930709, US 1995-405549 19950316; EP 660931 A4 EP 1994-921490

FDT EP 660931 A1 Based on WO 9502183; JP 08501883 W Based on WO 9502183; US 5618735 A Div ex US 5415999

PRAI US 1993-89975 19930709; US 1995-405549 19950316

AB WO 9502183 A UPAB: 19950306

The following are claimed: (A) a fluorescent layer (I) comprising: (a) a polymerised **polydiacetylene** lipid layer (II); and (b) a macromolecular ligand (ML) non-covalently associated with the lipid layer, where the ML has 1 binding site which binds to a complementary member; upon binding of a fluorescent quencher to the member, the fluorescence of the lipid layer is diminished; (B) a fluorescent layer comprising: (a) a solid support; (b) a macromolecular proteinaceous ligand adsorbed onto the solid support; and (c) a (II) layered onto the ML or opt. (b') a (II) adsorbed onto the solid support; and (c') ML covering the (II); (C) **detecting** the presence of **analyte** in a sample using fluorescence as a measurement and employing a conjugate which modulates the fluorescence of a fluorescer in relation to the amt. of analyte in the sample using the fluorescer as in (A); (D) a kit comprising: (a) (I); (b) a conjugate of an enzyme and a member of a specific binding pair; and (c) an enzyme substrate of the enzyme resulting in a prod. capable of modulating the fluorescence of the fluorescent layer.

USE - The method enables the detection of molecules by the use of fluorescent materials in association with materials capable of binding to a substance to form a specific binding pair. Any analyte can be determined by the method. Ligands can be haptenic or antigenic, single molecules, polysubunit molecules or aggregations e.g. microsomes, cells or virus particles. The ligands include venous drugs e.g. drugs of abuse, therapeutic drugs or toxins. The analytes may include surface membrane proteins, e.g. HLA proteins, mutant proteins, lipopolysaccharides, peptide drugs, cancer markers, viral proteins, cyclodextrans, placental antigens, ferritin, enzymes, interferon and cytoplasmic proteins. Other ligands of interest include hormones such as thyroxine, triiodothyronine, growth hormone, steroids, vitamins and cofactors.

Dwg.0/0

L16 ANSWER 15 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 1985-216694 [35] WPIDS

DNC C1985-094411

TI Coating polymeric mono(pentafluoro sulphur) **di acetylene** - to alter surface properties of **substrate**.

DC A12 A32 L01 M13

IN DEMARCO, R A; KOVACINA, T A; SNOW, A W

PA (USNA) US SEC OF NAVY

CYC 1

PI US 4535011 A 19850813 (198535)* 4p

ADT US 4535011 A US 1983-562251 19831216

PRAI US 1983-562251 19831216

AB US 4535011 A UPAB: 19930925

Polymeric mono(pentafluoro sulphur)**diacetylene** (I) is coated by maintaining mono(pentafluorosulphur) **diacetylene** (II) at from -20 to 30 deg.C as a gas which is then contacted with a surface until sufficient (II) has polymerised on it. The novel cpd. (II) is maintained as a gas at 0-20 deg.C.

USE - (I) is esp. important as a protective coating and due to the stability of (II) as a result of the SF5 gp., it can be used to alter the surface properties of a wide range of materials, e.g. glass is passivated w.r.t. fluorine.

0/0

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FILE 'BIOSIS' ENTERED AT 09:09:52 ON 14 MAR 2002
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FILE COVERS 1969 TO DATE.
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 13 March 2002 (20020313/ED)


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     (FILE 'BIOSIS' ENTERED AT 09:06:07 ON 14 MAR 2002)
               DEL HIS Y

     FILE 'REGISTRY' ENTERED AT 09:06:14 ON 14 MAR 2002
               E POLYDIACETYLENE/CN
L1           1 S E3
               E DIACETYLENE/CN
L2           2 S E3 OR E10

     FILE 'BIOSIS' ENTERED AT 09:06:36 ON 14 MAR 2002
L3          37 S L1 OR L2
L4         111 S POLYDIACETYLENE# OR POLY DI ACETYLENE# OR POLYDI ACETYLENE# O
L5      522248 S ?ARRAY? OR ?ASSAY?
L6           4 S L4 AND L5
L7       99347 S FLUROES? OR FLUORO?
L8      286481 S L7 OR FLUORES?
L9           7 S L4 AND L8
L10      91464 S (ANALYTE# OR ANTIBOD? OR TOXIN# OR ENZYM?) (5A) (DETECT? OR A
L11          2 S L4 AND L10
L12         13 S L11 OR L9 OR L6

     FILE 'BIOSIS' ENTERED AT 09:09:52 ON 14 MAR 2002

=> d bib ab it 1-14

L12  ANSWER 1 OF 13  BIOSIS  COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN   2002:6333  BIOSIS
DN   PREV200200006333
TI   Nucleic acid-coupled colorimetric analyte detectors.
AU   Charych, Deborah H.; Jonas, Ulrich (1)
CS   (1) Mainz Germany
     ASSIGNEE: Regents of the University of California
PI   US 6306598 October 23, 2001
SO   Official Gazette of the United States Patent and Trademark Office Patents,
     (Oct. 23, 2001) Vol. 1251, No. 4, pp. No Pagination. e-file.
     ISSN: 0098-1133.
DT   Patent
LA   English
AB   The present invention relates to methods and compositions for the direct
     detection of analytes and membrane conformational
     changes through the detection of color changes in biopolymeric materials.
     In particular, the present invention provide for the direct colorimetric
     detection of analytes using nucleic acid ligands at
     surfaces of polydiacetylene liposomes and related molecular
     layer systems.
```

IT Major Concepts
Clinical Chemistry (Allied Medical Sciences); Methods and Techniques
IT Chemicals & Biochemicals
nucleic acid-coupled colorimetric **analyte detectors**
IT Methods & Equipment
direct **analyte detection** method: **detection** method

L12 ANSWER 2 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 2001:481947 BIOSIS
DN PREV200100481947
TI Polymerizable **fluorescent** liposomes incorporating lanthanide ions.
AU Roy, Bidhan (1); Arruda, Andrea (1); Mallik, Sanku (1); Campiglia, Andres (1)
CS (1) Department of Chemistry, North Dakota State University, Ladd Hall 104, Fargo, ND, 58105: bidhan_roy@ndsu.nodak.edu USA
SO Abstracts of Papers American Chemical Society, (2001) Vol. 222, No. 1-2, pp. ORGN561. print.
Meeting Info.: 222nd National Meeting of the American Chemical Society Chicago, Illinois, USA August 26-30, 2001 American Chemical Society . ISSN: 0065-7727.
DT Conference
LA English
SL English
IT Major Concepts
Biochemistry and Molecular Biophysics
IT Chemicals & Biochemicals
conjugated alkenes; **diacetylene**; lanthanide ions: incorporation; polymerizable **fluorescent** liposomes: design, synthesis
IT Methods & Equipment
fluorescence studies: analytical method
IT Miscellaneous Descriptors
Meeting Abstract
RN **460-12-8 (DIACETYLENE)**

L12 ANSWER 3 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 2001:449913 BIOSIS
DN PREV200100449913
TI A new colorimetric **assay** for studying and rapid screening of membrane penetration enhancers.
AU Evrard, Damien; Touitou, Elka; Kolusheva, Sofiya; Fishov, Yitzhak; Jelinek, Raz (1)
CS (1) Department of Chemistry and Stadler Minerva Center for Mesoscale Macromolecular Engineering, Ben Gurion University of the Negev, Beersheva, 84105: razj@bgumail.bgu.ac.il Israel
SO Pharmaceutical Research (New York), (July, 2001) Vol. 18, No. 7, pp. 943-949. print.
ISSN: 0724-8741.
DT Article
LA English
SL English
AB Purpose. This work aims to demonstrate a novel chemical **assay** for rapid screening and analysis of the mode of action of membrane interaction by penetration enhancers. Methods. The new bio-mimetic membrane assembly, consisting of supramolecular aggregates of lipids and conjugated **polydiacetylene**, undergoes visible and quantifiable blue-red color transitions upon interaction with penetration enhancers. Results. The new colorimetric model has been employed to examine various

classes of penetration enhancers, including 1-dodecylhexahydro-2H-azepin-2-one (Azone), oleic acid, propylene-glycol, menthol, ethoxyglycol-diethyleneglycol-monoethyl-ether (Transcutol), polysorbate-polyethylenesorbitan-monolaurate (Tween-20), and the drug 7-chloro-1-methyl-5-phenyl-3H-1,4-benzodiazepin-2-one (Diazepam). The **assay** enables to evaluate the validity of various observations and hypotheses proposed in previous studies regarding permeation enhancement activities. Our results suggest, for example, that propylene glycol (PG) by itself does not interfere with membranes, but rather exhibits synergistic effect in combination with other penetration enhancers. Similarly, our data demonstrate that Transcutol does not independently interact with membranes. The colorimetric system also indicates that interaction of penetration enhancers with membranes depend upon the lipid phase, as well as the self-assembly properties of the enhancer molecules. Conclusions. The new biomimetic model membrane system can be applied for rapid screening of the activities of penetration enhancers, and provides insight into the mechanisms of permeability of membrane-active compounds.

IT Major Concepts
Biochemistry and Molecular Biophysics; Membranes (Cell Biology); Methods and Techniques; Pharmaceuticals (Pharmacology)

IT Chemicals & Biochemicals
Azone: penetration enhancer; Diazepam: penetration enhancer; Transcutol: penetration enhancer; Tween-20: penetration enhancer; conjugated **polydiacetylene**; lipids; menthol: penetration enhancer; oleic acid: penetration enhancer; propylene-glycol: penetration enhancer

IT Miscellaneous Descriptors
biomimetic model: membrane system; colorimetric model

RN 59227-89-3 (AZONE)
439-14-5 (DIAZEPAM)
111-90-0 (TRANSCUTOL)
9005-64-5 (TWEEN-20)
89-78-1Q (MENTHOL)
1490-04-6Q (MENTHOL)
112-80-1 (OLEIC ACID)
57-55-6 (PROPYLENE-GLYCOL)

L12 ANSWER 4 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1999:423161 BIOSIS
DN PREV199900423161
TI Molecular recognition of concanavalin A on mannoside **diacetylene** lipid monolayer at the air-water interface.
AU Wang, Shaopeng; Leblanc, Roger M. (1)
CS (1) Department of Chemistry, University of Miami, Coral Gables, FL, 33124-0431 USA
SO Biochimica et Biophysica Acta, (July 15, 1999) Vol. 1419, No. 2, pp. 307-312.
ISSN: 0006-3002.
DT Article
LA English
SL English
AB The interaction of p-10,12-pentacosadiyne-1-n-phenylamide alpha-D-mannopyranoside (MPDA) with protein concanavalin A (Con A) was studied at the air/water interface. The expansion of molecular area of PDA (10,12-pentacosadiynoic acid)/MPDA mixed monolayer after injection of Con A in subphase shows strong interaction between Con A and the monolayer. The maximum expansion of molecular area decreases as the molar ratio of MPDA increases due to the steric hindrance effect. By using enzyme mannosidase to cut-off the mannoside headgroup of MPDA, expansion of molecular area was greatly reduced, indicating that the binding of Con A

is specific to the mannoside headgroup. The kinetics of the binding fits to the first order bimolecular reaction model. **Fluorescence** quenching of **fluorescein** isothiocyanate labeled Con A after injection into the subphase gives a direct proof of the molecular recognition.

IT Major Concepts
Biochemistry and Molecular Biophysics; Methods and Techniques

IT Chemicals & Biochemicals
concanavalin A: Sigma; mannoside **diacetylene** lipid monolayer: analysis; p-10,12-pentacosadiyne-1-n-phenylamide alpha-D-mannopyranoside; 10,12-pentacosadiynoic acid: Farchan Laboratories

IT Methods & Equipment
fluorescence spectrum: analytical method, optical analysis

RN 11028-71-0 (CONCANAVALIN A)
66990-32-7 (10 12-PENTACOSADIYNOIC ACID)
188471-21-8 (P-10 12-PENTACOSADIYNE-1-N-PHENYLAMID)

L12 ANSWER 5 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1998:230094 BIOSIS
DN PREV199800230094
TI Scanning near-field **fluorescence** microscopy of thin organic films at the water/air interface.
AU Kramer, A. (1); Hartmann, T.; Eschrich, R.; Guckenberger, R.
CS (1) Max-Planck-Inst. Biochemie, D-82152 Martinsried Germany
SO Ultramicroscopy, (March, 1998) Vol. 71, No. 1-4, pp. 123-132. ISSN: 0304-3991.
DT Article
LA English
AB We present an aperture scanning near-field optical microscope that has the ability of investigating objects at the liquid/air interface, e.g. molecularly thin films floating on a water subphase. For controlling the tip-sample distance, only the transmitted fight is used. This signal shows the well-known interference fringes when approaching the tip towards a surface. Using modulation techniques, it is possible to keep the tip at an extremum of the intensity-distance curve. For high-resolution imaging the tip needs to come closer to the sample surface with respect to the regulation set value. We accomplish this by interrupting the distance regulation feedback in the forward scan, and moving the tip across the sample additionally approached by a set value. Thus, we scan the tip at constant height in the near-field of the sample. This excludes artifacts which sometimes arise in the mostly used topography following scan mode. We present transmission and **fluorescence** contrast images of a thin metal film and of **polydiacetylene** thin films, both floating on water.

IT Major Concepts
Methods and Techniques

IT Chemicals & Biochemicals
polydiacetylene thin film; thin metal film

IT Methods & Equipment
aperture scanning near-field optical microscope: equipment; scanning near-field **fluorescence** microscopy: detection/labeling techniques, microscopy methods

IT Miscellaneous Descriptors
fluorescence contrast image; transmission contrast image; water/air interface

L12 ANSWER 6 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1997:361958 BIOSIS
DN PREV199799653891
TI Monolayer properties of monosialoganglioside in the mixed

diacetylene lipid films on the air/water interface.
AU Cheng, Quan; Stevens, Raymond C. (1)
CS (1) Dep. Chem., Univ. Calif., Berkeley, CA 94720 USA
SO Chemistry and Physics of Lipids, (1997) Vol. 87, No. 1, pp. 41-53. ISSN: 0009-3084.
DT Article
LA English
AB By combining the cellular membrane receptor GM1 with diacetylenic lipids, blue monolayer films can be created that undergo a colorimetric transition to red upon exposure to cholera toxin. The monolayer behaviour of GM1 in diacetylenic films was studied using the Langmuir-Blodgett technique with the goal of building colorimetric biosensors. Macroscopic characteristics of the films were obtained through analysis of surface pressure-area isotherms of GM1 and derivatized diacetylenic lipids at the air/water interface. Film optical properties and colorimetric response were optimized through modification of the ratio of receptor GM1 to **diacetylene** lipids and **detection** of the target **analyte** cholera **toxin**. Isothermic compression studies show that the mixed monolayers exhibit favorable film compressibility and high transferability as compared to the monolayers consisting of pure GM1. The impact of ionic strength and sub-phase pH on molecular interactions of lipids and miscibility of the mixed films is discussed. Contrary to usual temperature dependence observed for saturated fatty lipids, GM1/diacetylenic monolayers display an inverse relationship between temperature and surface pressure.
IT Major Concepts
Biochemistry and Molecular Biophysics; Membranes (Cell Biology)
IT Chemicals & Biochemicals
DIACETYLENE; GANGLIOSIDE GM1
IT Miscellaneous Descriptors
BIOCHEMISTRY AND BIOPHYSICS; BIOSENSORS; COLORIMETRIC RESPONSE; **DIACETYLENE** LIPID FILMS; GANGLIOSIDE GM1; LANGMUIR-BLODGETT TECHNIQUE; MEMBRANES; MONOLAYERS; MONOSIALOGANGLIOSIDE; OPTICAL PROPERTIES
RN **460-12-8 (DIACETYLENE)**
37758-47-7Q (GANGLIOSIDE GM1)
104443-62-1Q (GANGLIOSIDE GM1)

L12 ANSWER 7 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1995:403491 BIOSIS
DN PREV199598417791
TI Total alignment of calcite at acidic **polydiacetylene** films: Cooperativity at the organic-inorganic interface.
AU Berman, Amir; Ahn, Dong June; Lio, Anna; Salmeron, Miquel; Reichert, Anke; Charych, Deborah (1)
CS (1) Center Advanced Materials, Lawrence Berkeley Lab., Berkeley, CA 94720 USA
SO Science (Washington D C), (1995) Vol. 269, No. 5223, pp. 515-518. ISSN: 0036-8075.
DT Article
LA English
AB Biological matrices can direct the absolute alignment of inorganic crystals such as calcite. Cooperative effects at an organic-inorganic interface resulted in similar co-alignment of calcite at polymeric Langmuir-Schaefer films of 10,12-pentacosadiynoic acid (p-PDA). The films nucleated calcite at the (012) face, and the crystals were co-aligned with respect to the polymer's conjugated backbone. At the same time, the p-PDA alkyl side chains reorganized to optimize the stereochemical fit to the calcite structure, as visualized by changes in the optical spectrum of the polymer. These results indicate the kinds of interactions that may occur

in biological systems where large **arrays** of crystals are co-aligned.

IT Major Concepts
Biochemistry and Molecular Biophysics

IT Chemicals & Biochemicals
CALCITE; **POLYDIACETYLENE**

IT Miscellaneous Descriptors
CALCITE; CRYSTAL GROWTH

RN 13397-26-7 (CALCITE)
27987-87-7 (**POLYDIACETYLENE**)

L12 ANSWER 8 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1994:502192 BIOSIS
DN PREV199497515192
TI A highly sensitive enzyme-linked immunosorbent **assay** (ELISA) for antitumor polyacetylenic alcohol panaxytriol.
AU Saita, Tetsuya; Matsunaga, Hisashi; Yamamoto, Hiroshi; Nagumo, Fumio; Fujito, Hiroshi; Mori, Masato; Katano, Mitsuo (1)
CS (1) Saga Med. Sch., Nabeshima 5-chome 1-1, Saga 849 Japan
SO Biological & Pharmaceutical Bulletin, (1994) Vol. 17, No. 6, pp. 798-802. ISSN: 0918-6158.
DT Article
LA English
AB A new type of antitumor polyacetylenic alcohol, panaxytriol, was isolated from the roots of Panax ginseng C. A. MEYER. A highly sensitive enzyme-linked immunosorbent **assay** (ELISA) for the determination of panaxytriol was developed, which is capable of measuring as low as 25.6 pg/ml. Anti-panaxytriol antibody was obtained by immunizing rabbits with panaxytriol conjugated with bovine serum albumin using the N-succinimidyl ester method. An enzyme marker was similarly prepared by coupling panaxytriol with horseradish peroxidase. The specificity of this ELISA seems to be primarily toward both the glycol moiety and the **diacetylene** moiety of the panaxytriol, showing a slight crossreaction with the other panaxytriol analogues which are structurally different only in C-9,10 positions, but no cross-reaction with the 1,2-decanediol or 3-nonyn-1-ol. The values for panaxytriol concentration detected by this **assay** were comparable with those detected by the gas chromatography method. The ELISA was about 5000 times more sensitive in detecting panaxytriol. Using this **assay**, panaxytriol levels were easily determined in the blood of rats. The ELISA may be a valuable tool for studies of the biological and pharmacological properties of the polyacetylenic alcohol, panaxytriol.

IT Major Concepts
Biochemistry and Molecular Biophysics; Enzymology (Biochemistry and Molecular Biophysics); Immune System (Chemical Coordination and Homeostasis); Metabolism; Methods and Techniques; Pharmacognosy (Pharmacology); Pharmacology; Tumor Biology

IT Chemicals & Biochemicals
ALCOHOL; PANAXYTRIOL

IT Miscellaneous Descriptors
ANALYTICAL METHOD; ANTINEOPLASTIC; PANAXYTRIOL; PHARMACOKINETICS

ORGN Super Taxa
Araliaceae: Dicotyledones, Angiospermae, Spermatophyta, Plantae; Leporidae: Lagomorpha, Mammalia, Vertebrata, Chordata, Animalia; Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
rabbit (Leporidae); rat (Muridae); Panax ginseng (Araliaceae)

ORGN Organism Superterms
angiosperms; animals; chordates; dicots; lagomorphs; mammals; nonhuman mammals; nonhuman vertebrates; plants; rodents; spermatophytes;

vascular plants; vertebrates
RN 64-17-5 (ALCOHOL)
87005-03-6 (PANAXYTRIOL)

L12 ANSWER 9 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1993:436971 BIOSIS
DN PREV199396091596
TI Direct colorimetric detection of a receptor-ligand interaction by a polymerized bilayer assembly.
AU Charych, Deborah H. (1); Nagy, Jon O.; Spevak, Wayne; Bednarski, Mark D.
CS (1) Cent. Advanced Materials, Lawrence Berkeley Lab., Berkeley, CA 94720 USA
SO Science (Washington D C), (1993) Vol. 261, No. 5121, pp. 585-588. ISSN: 0036-8075.
DT Article
LA English
AB Detection of receptor-ligand interactions is generally accomplished by indirect **assays** such as enzyme-linked immunosorbent **assay**. A direct colorimetric detection method based on a **polydiacetylene** bilayer assembled on glass microscope slides has been developed. The bilayer is composed of a self-assembled monolayer of octadecylsilane and a Langmuir-Blodgett monolayer of **polydiacetylene**. The **polydiacetylene** layer is functionalized with an analog of sialic acid, the receptor-specific ligand for the influenza virus hemagglutinin. The sialic acid ligand serves as a molecular recognition element and the conjugated polymer backbone signals binding at the surface by a chromatic transition. The color transition is readily visible to the naked eye as a blue to red color change and can be quantified by visible absorption spectroscopy. Direct colorimetric detection by **polydiacetylene** films offers new possibilities for diagnostic applications and screening for new drug candidates or binding ligands.
IT Major Concepts
Membranes (Cell Biology); Methods and Techniques; Pharmacology
IT Miscellaneous Descriptors
SYNTHETIC METHOD; THERAPEUTIC AGENT

L12 ANSWER 10 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1992:346420 BIOSIS
DN BA94:38645
TI SPONTANEOUS DOMAIN FORMATION OF PHOSPHOLIPASE A-2 AT INTERFACES **FLUORESCENCE** MICROSCOPY OF THE INTERACTION OF PHOSPHOLIPASE A-2 WITH MIXED MONOLAYERS OF LECITHIN LYSOLECITHIN AND FATTY ACID.
AU REICHERT A; RINGSDORF H; WAGENKNECHT A
CS INST. ORGANISCHE CHEMIE, J.-J. BECHER WEG 18-20, UNIVERSITAET MAINZ, W-6500 MAINZ, GERMANY.
SO BIOCHIM BIOPHYS ACTA, (1992) 1106 (1), 178-188. CODEN: BBACAQ. ISSN: 0006-3002.
FS BA; OLD
LA English
AB **Fluorescence** microscopy has recently been proven to be an ideal tool to investigate the specific interaction of phospholipase A2 with oriented substrate monolayers. Using a dual labeling technique, it could be shown that phospholipase A2 can specifically attack and hydrolyze solid analogous L-.alpha.-DPPC domains. After a critical extent of monolayer hydrolysis the enzyme itself starts to aggregate forming regular shaped protein domains (Grainger et al. (1990) Biochim. Biophys. Acta 1023, 365-379). In order to confirm that the existence of hydrolysis products in the monolayer is necessary for the observed aggregation of phospholipase A2, mixed monolayers of D- and L-.alpha.-DPPC, L-.alpha.-lysoPPC and

palmitic acid in different ratios were examined. The phase behavior and the interaction of these films with phospholipase A2 were directly visualized with an epifluorescence microscope. Above a certain critical concentration of lysolecithin and palmitic acid in the monolayer, compression of these mixed films leads to phase separation and formation of mixed domains of unknown composition. Their high negative charge density is evidenced by preferential binding of a cationic dye to these phase-separated areas. Introduction of **fluorescence**-labeled phospholipase A2 underneath these mixed domains results in rapid binding of the protein to the domains without visible hydrolytic activity, regardless of whether the L-form or the D-form of the DPPC were used. In binary mixtures, only those with DPPC/palmitic acid show formation of phase-separated areas which can be specifically targeted by phospholipase A2 leading to a rapid formation (within 2 min) of protein domains. Experiments with pyrenedecanoic acid containing monolayers give the first direct evidence that acid is located above the enzyme domains. These results show that a locally high negative charge density of the phase-separated domains is one of the prerequisites for the binding of phospholipase A2. In addition, however, small amounts of D- or L-.alpha.-DPPC headgroups within the domains of the monolayer seem to be necessary for recognition followed by fast binding of the protein to the domains. This is confirmed by experiments with mixed monolayers of **diacetylene** carboxylic acid and D-.alpha.-DPPC. The acid-immiscible with lecithin-forms well defined pure acid domains in the monolayer. While the cationic dye can be docked rapidly to these phase separated areas, no preferential enzyme binding and thus no protein domain formation below these acid domains can be induced.

IT Miscellaneous Descriptors
L-ALPHA DIPALMITOYLPHOSPHATIDYLCHOLINE PALMITIC ACID L-ALPHA LYSOPALMITOYLPHOSPHATIDYLCHOLINE

RN 57-10-3 (PALMITIC ACID)
63-89-8 (L-ALPHA DIPALMITOYLPHOSPHATIDYLCHOLINE)
9001-84-7 (PHOSPHOLIPASE A-2)
17364-16-8 (L-ALPHA LYSOPALMITOYLPHOSPHATIDYLCHOLINE)

L12 ANSWER 11 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1990:243362 BIOSIS
DN BA89:130315
TI EFFECTS OF CHAIN-LENGTH AND UNSATURATION ON AFFINITY AND SELECTIVITY AT MUSCARINIC RECEPTORS.
AU BARLOW R B; HOLDUP D W; HARRIS G; VEALE M A; WILLIAMS A
CS DEP. PHARMACOL., MED. SCH., UNIVERSITY WALK, BRISTOL BS8 1TD.
SO BR J PHARMACOL, (1990) 99 (3), 622-626.
CODEN: BJPCBM. ISSN: 0007-1188.
FS BA; OLD
LA English
AB 1. Lengthening the chain in diphenylacetylcholine decreases affinity for muscarinic cholinoceptors in guinea-pig ileum. Diphenylacetoxypropyldimethylamine and its quaternary trimethylammonium salt are roughly equiactive: the dimethylamine and the piperidine have some selectivity for ileum compared with atria, but are not as active nor as selective as 4-diphenylacetoxy-N-methylpiperidine (4-DAMP) methobromide (MeBr). With the weaker diphenylacetoxybutyl compounds the base is more active than the quaternary salt. 2. The diphenylacetoxybutyl-, cis-butenyl and trans-butenyl compounds have similar affinities. The quaternary salts are less active than the tertiary bases, but they are less selective than the butynyl analogues studied in earlier work. 3 1,1-Diphenyl-1-hydroxy-2,4-hexadiynyl dimethylamine and its trimethylammonium salt are inactive in concentrations below 100 .mu.M, as are the (+)-camphor-sulphonyl ester of 4-hydroxy-N-methyl piperidine and its methiodide. The

(.+-.)-phenylcyclopentylacetyl ester of 4-hydroxy-N-methylpiperidine methobromide is more active than its cyclohexyl analogue and than 4-DAMP MeBr but it is less selective than 4-DAMP MeBr. 4. The high selectivity of p-**fluoro**-hexahydrosila-diphenidol is confirmed but this compound has relatively low affinity (for ileum log K=7.8). 5. The results indicate steric constraints to binding at muscarinic receptors which could be used to check molecular modeling of the receptor based on its known amino acid sequence. The group binding the charged nitrogen is probably at the mouth of a cavity which can accomodate two large rings (as in 4-DAMP MeBr) but with a depth less than about 7 .ANG. so that the rod-like hexadiynes cannot fit. Differences between types of receptor may only involve small changes in geometry secondary to differences in amino acids not directly involved in binding and the production of selectivity depends upon finding substituents which interfere with binding more at one type of receptor than at another.

IT Miscellaneous Descriptors
GUINEA-PIG ILEUM ATRIA DIPHENYLACETOXYPROPYL COMPOUNDS DIPHENYLACETOXYBUTYL COMPOUNDS CIS BUTENYL COMPOUNDS TRANS BUTENYL COMPOUNDS **DIACETYLENES** MOLECULAR MODELING

RN 460-12-8D (**DIACETYLENES**)
11069-22-0D (BUTENYL)

L12 ANSWER 12 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1989:518062 BIOSIS
DN BA88:134205
TI POLYFLUORO-SUBSTITUTED ALKYNES AND ALKADIYNIC CARBOXYLIC AND HYDROXAMIC ACIDS.
AU RADCHENKO O A; PROSHAKOVA E V; IL'CHENKO A YA
CS INST. ORG. CHEM., ACAD. SCI. UKR. SSR, KIEV, USSR.
SO DOKL AKAD NAUK UKR SSR SER B GEOL KHIM BIOL NAUKI, (1989) 0 (4), 44-47.
CODEN: DNNADO. ISSN: 0201-8454.
FS BA; OLD
LA Russian
AB 1,3,3,4,10-pentahydrododecafluoro-1-decyn-4-ol, product of its dimerization, 15-(16-hydroperfluorohexyl)-15-hydroxy-10,12-pentadecadienoic and hydroxamic acids and other **fluorosubstituted diacetylene** derivatives have been synthesized. Their spectra and ability to topochemical polymerization are described.
IT Miscellaneous Descriptors
HUMAN APPLICATION PHARMACOLOGY TOPOCHEMICAL POLYMERIZATION SPECTRA

L12 ANSWER 13 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1988:402102 BIOSIS
DN BA86:74741
TI OPTICAL DETECTION OF TOXIC GASES USING **FLUORESCENT** PORPHYRIN LANGMUIR-BLODGETT FILMS.
AU BESWICK R B; PITT C W
CS DEP. ELECTRONIC ELECTRICAL ENG., UNIV. COLL. LONDON, TORRINGTON PLACE, LONDON WC1E 7JE, ENGL.
SO J COLLOID INTERFACE SCI, (1988) 124 (1), 146-155.
CODEN: JCISA5. ISSN: 0021-9797.
FS BA; OLD
LA English
AB The **fluorescence** response of Langmuir-Blodgett films of tetraphenylporphine mixed with arachidic acid (AA) and pentacosa-10,12-diynoic acid (12,8-**diacetylene**) has been studied in the presence of the industrial pollutant gases NO2, HCl, and Cl2. The **fluorescence** of tetraphenylporphine (TPP) is quenched in the presence of very low concentrations of these gases (1-10 ppm). The **fluorescence** response of the **diacetylene**/TPP films to

low concentrations of NO2 (< 100 ppm) is reversible, and by exposing the nonreversibly quenched TPP/**diacetylene** and TPP/AA films to NH3 the **fluorescence** is completely restored. The **fluorescence** quenching action of these gases has been attributed to the "heavy atom effect" which facilitates intersystem crossing within excited TPP molecules. An optical fiber/prism method of assessing the film response was used.

IT Miscellaneous Descriptors
NITROGEN DIOXIDE CHLORINE HYDROCHLORIC ACID INDUSTRIAL POLLUTANTS

RN 101-60-0 (PORPHYRIN)
7647-01-0 (HYDROCHLORIC ACID)
7782-50-5 (CHLORINE)
10102-44-0 (NITROGEN DIOXIDE)